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IN THE

Supreme Court of the United States.

OCTOBER TERM, 1922.

No. 418 51

SAML. H. WOODBRIDGE AND E. WOODBRIDGE BARNES, EXECUTORS OF WILLIAM E. WOODBRIDGE, DECEASED,

Appellants,

vs.

THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

BRIEF FOR THE APPELLANTS.

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Appellants,

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THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

BRIEF FOR THE APPELLANTS.

STATEMENT OF THE CASE.

This case is an appeal from a decision of the Court of Claims in favor of the United States.

The case originated in a special act of Congress, approved March 2, 1901, which was as follows:

> "An act referring to the Court of Claims the claim of William E. Woodbridge for compensation for the use by the United States of his invention relating to projectiles, for which letters patent were ordered to issue to him March twenty-fifth, eighteen hundred and fifty-two.
>
> Be it enacted by the Senate and House of Representatives of the United States of America, in Con-

gress assembled, that the claim of William E. Woodbridge for compensation for the use of his alleged invention relating to projectiles for rifled cannon, for which letters patent were ordered to issue March twenty-fifth, eighteen hundred and fifty-two, by the United States Government, be, and the same is hereby referred to the Court of Claims of the United States, which court is hereby vested with jurisdiction in the premises, and whose duty it shall be to hear and determine, according to its usual rules of procedure—

First. Whether the said Woodbridge was the original and first inventor of the said invention and entitled to a patent therefor.

Second. To what extent the said invention has been used by the United States Government, and what amount of compensation, if any, the said Woodbridge ought to receive, in equity and justice, from the United States Government for the past use of said invention. And in considering and determining the compensation to be made, if any, the said court shall, if it find that the said Woodbridge was the first and original inventor of said invention and entitled to a patent at the time of its order to issue, namely, March twenty-fifth, eighteen hundred and fifty-two, proceed and be guided in all respects as though the aforesaid letters patent had been actually issued for the term of seventeen years from the date of the aforesaid order to issue; the court to render judgment, irrespective of lapse of time, in favor of the claimant with the same effect, including right of appeal, as judgments generally of said court: Provided, however, That the said court shall first be satisfied that the said Woodbridge did not forfeit, or abandon, his right to a patent, by publication, delay, laches, or otherwise; and that the said patent was wrongfully refused to be issue by the Patent Office.

Approved March 2, 1901."

No patent was ever issued on the Woodbridge invention and the object of the act of Congress was to enable the Court of Claims to supply what was the equivalent of a patent and award compensation for the use of

the invention covered thereby provided the conditions specified in the act were found to have been fulfilled and that the Government used the invention or, in effect, infringed the quasi patent thus to be created.

The Issues.

The defenses to the action sustained by the Court of Claims were first, abandonment of the invention, or, as stated in the act "the right to a patent," and second, noninfringement.

The Invention.

The invention related to projectiles for rifled ordnance or cannon and particularly to means adapted to impart the rotary or rifle motion to the shell, to close the bore of the cannon against "windage," that is, the escape of the gases of explosion past the projectile and to cause the projectile to travel directly in the line of the axis of the bore of the gun. It consisted of a ring called a "sabot" or shoe of softer metal than the body of the projectile attached to the rear of the projectile and adapted to be expanded by the force of the exploded gases of the powder charge outwardly into engagement with the wall of the bore of the cannon both against the walls and bottom of the grooves and against the "lands" between the grooves so as to thereby close the bore and also tightly engage the rifle grooves. The result was the prevention of "windage," the rotation of the projectile about its axis producing the rifle motion and the prevention of bounding of the shell in the gun.

The invention was originated by Woodbridge in or prior to 1850. In 1850 it was brought to the attention of the United States War Department by Woodbridge with a view to having the invention adopted by the

Government. Trials of projectiles embodying the invention were made by army officers on behalf of the Government at the Washington arsenal and later at Fortress Monroe. These tests proved the advantage of using elongated projectiles (the present shape of all cannon shot and shell) as compared with round cannon balls and the practicability of the invention for giving the rifle motion to such projectiles. (Findings VII, Rec., 17.) Reports to the War Department on these trials were made by the army officers conducting them.

In the first of these reports that Col. Huger made November 5, 1850, it was said:

> "It appears from the penetration of his shot that they have a greater force than the round shot of the same calibre. * * *
>
> The plan of Dr. Woodbridge to increase the efficiency of projectiles by increasing their weight and diminishing the resistance of the air appears to me to be founded on correct principles, and will no doubt be an improvement if it can be rendered practicable in service." (Rec., 17.)

By service he meant packing, transporting, handling and insertion into the cannon in the field. The report of Maj. Mordecai (Rec., 17-20), following some criticisms of the new projectile, stated:

> "Although I do not regard Dr. Woodbridge's plan as applicable to the service in its proposed form, I think, as before remarked, that his efforts at improvement in ordnance are in the right direction."

The final report of Col. Huger to the Secretary of War, dated December 14, 1850, was as follows (Rec., 20):

> "In compliance with instructions from the War Department, dated December 3, requiring Major Mordecai and myself to report on a cannon offered by Mr. W. E. Woodbridge, I have the honor now to report:
>
> 1st. That a statement of all the trials in my pres-

ence were, at the request of Dr. Woodbridge, forwarded through him to the Chief of Ordnance.

2nd. That my opinion is that Dr. W. is searching in the proper direction to increase the accuracy and power of penetration of projectiles, viz.: in giving them such form as to increase their weight and diminish the resistance to the air. To do this it is essential to give them a rotary motion around their longest axis—rifle motion. In the experiments with a 6-pdr. gun this motion was given by means of a metallic sabot, but no arrangements were made to adapt it for service, and I doubt if the ammunition could be conveniently arranged to render it suitable for field service, or if it would offer sufficient advantages to cause its adoption even if the ammunition could be so arranged.

As regards its application to higher calibres, I have seen nothing to alter my opinion expressed to Dr. W., when he first explained to me his plans: 'That if he was prepared to carry on his experiments for five years at an annual expense of about fifty thousand dollars, we would probably at the end of that time be enabled to determine whether his plan was practicable and of sufficient value to cause its adoption.' "

On February 11, 1852, Woodbridge filed an application for patent on his invention. (Rec., 10.) He personally prepared and filed his application without the aid of an attorney. The specification was accompanied by drawings which were lost by the Patent Office but a copy was filed in court and proved and accepted in Finding I (Rec., 11) by the lower court as a substantial copy of said original drawings. These drawings show the breech portion of a muzzle loading cannon which is rifled, the rifle grooves being designated *e* in plate 1 and Fig. 2. It will be understood, although the drawings do not so indicate, that these grooves are directed slightly spirally or inclined to the axis of the bore of the gun to impart the twisting or rotary motion to the projectile. In the bore of the gun near the breeche is mounted a projectile

B, of ovoid form, as distinguished from the previously used spherical shot and shell. On the rear end of this projectile is mounted a "ring or sabot" *c*. This ring is made of metal "softer than the ball or cannon and capable of extension without rupture." (Specification, Rec., 10.) The cannon ball was made of hard cast iron. The sabot or ring is smaller than the bore of the gun. When the powder charge is exploded, the ring is stretched and expanded to fill the rifled bore. The ring is shown as tapered on its inner face to fit the ovoid end of the ball, so that when the explosion takes place the ring is also driven forward tightly on the ball so as to secure it to the latter and prevent its disconnection during flight. It is also shown as provided with projections which fit into the grooves of the cannon. It is further shown as provided with a circumferential groove or cup-shaped portion at its rear end adapted to act valvularly, that is, catch the gases and spread out at the thinner edges thereby formed, to more effectually prevent the escape of gases past the ring.

This was the specific embodiment illustrated to carry out his broad invention of the soft metal expansion sabot.

At the end of his specification he claimed his invention in the following language:

> "What I claim as my invention and desire to secure by letters patent is the application for rifle ring or sabot construction substantially as herein described, to the rear of a projectile for the purpose of communicating to it the rifle motion, without restricting myself to the particular proportions or material mentioned in the description.
>
> I also claim the use of a similar ring of extensible metal in smooth-bored guns, as set forth in the foregoing specification."

The Patent Office Examiner rejected the application, citing Mayer's rejected application and a publication.

The first was not legally an anticipation, now or then or ever, not being a patent or publication but Woodbridge referred to satisfactory proof that his invention was prior to Mayer. He distinguished by an argument from the publication. Thereupon the Examiner suggested the form of two allowable claims and Woodbridge accepted them.

The claims allowed were as follows:

> "*First.* The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of diminishing the windage and giving the ball its motion in the direction of the axis of the bore; and,
>
> *Second.* A metallic ring similarly formed and placed, and furnished with projections as described, in combination with a rifle-bored gun, for the purpose of communicating the rifle motion in manner substantially as herein set forth." (Rec., 13.)

It is the first of these claims only that it is contended the Government has infringed.

Accompanying the amendment containing the above new claims, Woodbridge filed a request, based on practice then existing according to information of such practice given him by the Patent Office, that his patent when issued or ordered to issue be filed in the secret archives of the Patent Office. He stated:

> "If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will please consider one year as the time designated by me." (Rec., 13.)

On April 15, 1852, the Patent Office notified Woodbridge that on March 25, 1852, a patent had been ordered to issue on his invention "and in accordance with your request the papers were filed among the secret archives of the office, subject to your directions as to the time of issuing the same."

In December, 1852, Woodbridge printed and published a pamphlet describing his invention and his trials at Fortress Monroe and brought it to the attention of Congressmen and others in the period from 1852 to 1861 in an effort to promote the adoption of his invention. (Rec., 21.)

On December 31, 1861, Woodbridge requested the issue of his patent. On January 4, 1862, the Commissioner of Patents notified him that his patent would be ordered to issue. On January 29, 1862, the Patent Office by an examiner wrote refusing the issue of his patent on the ground that his application for patent had become abandoned.

Woodbridge appealed to the Board of Examiners-in-Chief who on July 10, 1862, affirmed the decision of the Examiner, although upon different grounds.

It was this refusal by the Examiner on January 29, 1862, that constituted the possible "wrongful refusal" covered by the proviso in the act of Congress.

Woodbridge then appealed to the Commissioner of Patents in person in 1871, but appeal was not heard until 1879 when the decision against Woodbridge was affirmed on the ground that his application for patent had been abandoned in contemplation of law. The Supreme Court of the District of Columbia affirmed the Commissioner's decision.

Findings of the Court of Claims.

The court below after finding the above facts also found as facts that Woodbridge was duly entitled to a patent on March 25, 1852, as required by the act of Congress (Rec., 23); that his invention was not in public use or on sale with his express consent or allowance within the period from March 25, 1852, to December 31,

1861 (Rec., 16-17); that certain hard metal projectiles described by the court, and having rifle rings or sabots and casings, of softer metal were used by the Government during the period specified in the act of Congress. (Rec., 23.) It then proceeds to find as a fact that the Government did not manufacture or use the invention "for which letters patent were ordered to issue" to Woodbridge. This finding which is that of noninfrngement of the claim is a conclusion of law and was so excepted to by plaintiffs.

The conclusion of law that plaintiffs' petition be dismissed was based, as appears from the opinion of the court, primarily upon the ground of abandonment of Woodbridge's right to a patent.

The opinion also holds noninfringement of the claim in issue.

Specification of Errors.

The errors assigned and here relied upon are:

"1. The court erred in deciding plaintiffs' petition should be dismissed.

2. The court erred in rendering judgment in favor of the United States against the plaintiffs for the cost of printing the record herein.

3. The conclusion of law of the court and the judgment of the court upon the findings of fact found by the court, or upon such findings as are truly and properly findings of fact as distinguished from conclusions of law, should have been in favor of the plaintiffs.

4. There are no facts to support the conclusion of law.

5. The facts are insufficient to support the conclusion of law.

6. The court erred in not sustaining plaintiffs' exceptions to the findings of fact and motion for a new trial based thereon.

7. The court erred in not granting plaintiffs'

motion to amend Finding 'V' of the findings of fact to include the opinion of the Board of Examiners in Chief rendered during the prosecution of the Woodbridge application.

(Exception on which assignment based.—'Their decision is an act in immediate continuance of the action of the Examiner in the "refusal" of the issue of the patent by "the Patent Office" and the reasons for the refusal given in the opinion of the Board accompanying the decision are facts necessary to be considered in the determination of the legal conclusion that the patent was or was not wrongfully refused to be issued.')

8. The court erred in not granting plaintiffs' motion to amend Finding 'VI,' of the findings of fact to eliminate the word 'express' before 'consent and allowance,' since there is no evidence in this record that the Woodbridge invention was in public use or on sale during the period stated in said finding either with or without the consent or allowance of the inventor.

9. The court erred in not granting plaintiffs' motion to amend Finding 'IX' in the findings of fact to eliminate the reference to the rejected application of Francis Mayer as constituting a part of the prior art, since as a matter of law a rejected application cannot be a part of the prior art.

10. The court erred in not sustaining plaintiffs' motion in respect to that part of Finding 'IX' of said findings of fact which includes reference to the French patents to Delvigne, Morel and Minie, since there is no evidence in the record of the dates of issue of said French patents, or of the dates of their publication, or of the dates of the specifications therein contained.

(Exception on which assignment based.—'The statement that the dates of issue and publication of the Delvigne, Morel and Minie French patents, "do not appear further than appears from the patents themselves," is incorrect as a statement of fact, in that the "patents" themselves do not appear in the granting part of the letters patent, but only certified copies of the specifications accompanying said alleged patents. These copies disclose only the offi-

cial "dates" or *datings* of these patents, namely, the dates of the beginning of the terms of the patents.

It is suggested and moved that the sentence in this finding beginning "to the above French patents" be amended to read as follows:

"As to the above French patent to Delvigne it is here represented only by a copy of the specification, including drawings, certified to by the Commissioner of Patents of the United States as being a true copy of the copy of said specification on file in the United States Patent Office and by a copy of the specification similarly certified to by the French Minister of Commerce, and as to the French patents to Morel and Minie they are here represented only by copies of the specification, including drawings, certified to by the Commissioner of Patents of the United States as true *copies of the specifications and drawings in the United States Patent Office, and the dates of the issue and publication of any of said French patents do not further appear.*"

Plaintiffs further except to any finding of said French patents as being in the prior art on the ground of said lack of proof of issue and publication.')

11. The court erred in not sustaining plaintiffs' motion to amend Finding 'X' of said findings of fact to eliminate the general reference to improvements added to the art during the period named in the finding, since there is no evidence in the record that any improvements other than those contained in the particular patents enumerated in said finding were addded to the art.

12. The court erred in not sustaining plaintiffs' motion and exception in respect to Finding 'XI' of the findings of fact on the ground of irrelevancy to the issues in this cause, since the patents therein enumerated are not anticipations of Woodbridge's invention or statutory bars to his right to a patent or evidence of forfeiture or abandonment, and since they do not establish intervening rights and were subsequent to the refusal of his patent.

13. The court erred in not sustaining plaintiffs' exception and motion with respect to Finding 'XII' of said findings of fact on the ground that a finding

of sixty-five hundredths (65/100) of a cent per pound would be a reasonable royalty for the use of the Woodbridge invention, since such finding does not afford as basis for a just compensation in equity and justice, as provided for by the act of Congress transmitting this claim to the Court of Claims, for the use of this invention by the United States during the emergency of the period of the Civil War.

14. The court erred in not sustaining plaintiffs' exception and motion to Finding 'XIV' of the findings of fact on the ground that such finding states a conclusion of law, namely, that of noninfringement, the determination of which question in this particular case wherein the material facts are not disputed is dependent solely upon the legal construction of claim 1 of the Woodbridge application.

15. Plaintiffs further assign as error that there are no facts to support the conclusion as set forth in said Finding 'XIV,' or that the facts are not sufficient to support said finding or conclusion.

16. The court erred in not holding as a conclusion of law that Woodbridge did not forfeit or abandon his right to a patent by publication, delay, laches or otherwise.

17. The court erred in not holding as a conclusion of law that the Woodbridge patent was wrongly refused to be issued by the Patent Office."

ARGUMENT.

The Terms of the Act.

The congressional history of the act is of importance. A bill like the act herein but without the proviso passed the Senate seven times and was approved by five committees of the House. Thorough consideration was given to the equities of the claim.

The language of the act itself is important in defining the period to be covered by the quasi patent and the consequent time during which the action or nonaction of the inventor as affecting the question of abandonment occurred. It is also important as defining the character of the right which the court must determine was abandoned or not abandoned.

In respect to the first clause of the act the court below has already found that Woodbridge was the original and first inventor of the invention and entitled to a patent therefor.

The first sentence of the second clause clearly implies that it was considered by Congress that the Government *had* used the invention. Then it fixes the term of the quasi patent to be granted by the Court of Claims, namely, for seventeen years from March 25, 1852. The end of this period was March 25, ~~1852~~ 1869. If the patent had been issued following Woodbridge's request of December 31, 1861, it would as a matter of established practice have been dated from the time of such issue. The objects of Congress in thus setting the beginning of the term of the property right may be deduced to have been, first, to prevent too long a postponement of the expiration of the term of the quasi patents; and, second,

make the ministerial act of issuing the patent coincide with the act of ordering to issue, on the theory of curing any possible question of the right of the Commissioner to retain the allowed application in the secret archives.

One clear and undoubted effect of the delimination of the term is to render unnecessary and to preclude consideration of any question of abandonment, laches, delay or refusal of the patent occurring after March 25, 1869, since it would be an obviously vain and foolish thing to consider possible abandonment of an invention already public property through expiration of the patent.

It may also be seriously considered whether all questions of abandonment, laches and failure to issue are not limited to conditions arising prior to March 25, 1852, and exclusive of conditions thereafter. It would seem logical that when Congress directed the court to consider the patent as issued on March 25, 1852, if then legally entitled to be issued, it meant to limit the questions of abandonment and wrongful failure or refusal to issue to conditions existing at that time. While this point would determine the issue of abandonment in plaintiffs' favor upon the position apparently advanced by the Court of Claims to the effect that the Commissioner had no authority to retain the application from issue, yet it is not at all necessary to plaintiffs' case, since it is their position that no evidence of abandonment up to January 4, 1862, has been produced and that the inventor was then still possessed of the right to a patent and that the Examiner in his action of January 29, 1862, was then wrong in refusing the patent.

The act, in the proviso, then says "the court must first be satisfied that Woodbridge did not forfeit or abandon his *right to a patent*, by publication, delay, laches or otherwise; and that said patent was wrongfully refused to be issued by the Patent Office."

The right to a patent is dependent upon capacity to comply with statutory requirements. Abandonment of the right to a patent means abandonment of the *invention*. There is a difference between abandonment of an invention and abandonment of an application for a patent. Under the present statutes an application may be expressly abandoned by the applicant or may become abandoned by operation of law through failure to prosecute within one year from an action by the Patent Office. But such abandonment does not work abandonment of the invention and if the inventor can comply with the statute he can file a new application for patent.

The Patent Office Examiner refused the patent on the ground of abandonment of the application. The court apparently grounded its adverse conclusion of law upon abandonment of the invention or abandonment of "his right to letters patent" (Rec., 35), although the greater part of the reasoning of the court is apparently directed to the point of abandonment of the application (Rec., 22, 34), and the opinion makes no reference whatever to the undisputed and incontestable fact that in 1862 Woodbridge was entitled to a patent under the statutes then in force and could have filed a new application and obtained such patent. There is certainly no finding of fact supporting or even relevant to the point of intention to abandon the invention or right to a patent. The gravamen of Woodbridge's offense in the eyes of the court is that he did not disclose to the public or the Government that he contemplated procuring a patent on his invention. (Rec., p. 28, line 1, p. 29, line 45, p. 35, line 30.) The principle thus advanced is *sui generis* in the law of patents.

ABANDONMENT EITHER OF THE RIGHT TO A PATENT OR OF THE APPLICATION IS NOT PROVED, IS NOT SUPPORTED BY THE FINDINGS OF FACT AND IN RESPECT TO THE RIGHT TO A PATENT THE FINDINGS ARE DIRECTLY OPPOSED TO SUCH CONCLUSION.

Abandonment is not to be presumed. It must be proved. Abandonment means intention to give up the right to obtain a patent.

Ide v. *Trorlicht et al.* 115 Fed. Rep. 53 C. C. A. 341.

McDuffie v. *Hestonville Ry. Co.*, 181 Fed. Rep. 503.

Mere lapse of time between the date of invention and the perfecting of the patent right is not evidence of intention to abandon.

(*Wood* v. *Cleveland Rolling Mill Co.* Fed. Case No. 17941.)

The findings establish that Woodbridge after inventing the device, disclosed the invention to the proper department of his only possible customer in times of peace, the United States Government. He caused through them, the invention to be reduced to practice, that is embodied in physical form capable of being used. It was tried under his direction. It was fully disclosed and discussed in the reports of two army officers to the Secretary of War. It was available for use by the Government. The reports were encouraging but did not recommend the adoption of the invention. The invention was of a radically new character, involving a complete revolution in the art of weapons of warfare, the change from round cannon balls to pointed cylindro shells and shot having the rifle motion and explosion thereof by percussion. In spite of the discouragement by the failure to

adopt the invention and in spite of the radical nature of his plan, Dr. Woodbridge persisted and filed his application for patent early in 1852. He then asserted his right to a patent in the only legal and proper way he could assert it. He did not tell the public or the Government he was going to file or had filed. No legal obligation rested upon him to do so and no legal benefit could result therefrom. There is no finding that the Government expected him to present the invention to it free of compensation.

His application for patent was rejected. He did not wait to reply and amend for two years and then successively at the end of two-year periods for thirteen years as did Berliner in the Berliner case, or eight years as did Simpson in the Colgate case, or indefinitely, as he might have done under the statutes and rules of practice then prevailing, but replied in seven days and to the next action in four days and the application was prosecuted to allowance and ordered to issue on March 25th, one month and fourteen days after filing. His right to a patent was established. He then requested that the actual issue and publication of the patent be delayed in order that he might not be barred from obtaining foreign patents. Publication prior to application was a bar in most countries and is to-day excepting under the special procedure now provided by the International Convention. It was and is a common legal and proper business procedure. Under the present practice, postponement of the issue of the patent is expressly permitted. Thus after the application is allowed, a period of six months is granted within which to pay the final Government fee and take out the patent. (Rev. St. Title LX, Sec. 4885.) At the end of the six-months period, the applicant may forfeit his application and then renew at any time within *two* years from the date of

allowance. (Rev. St. Sec. 4897.) He may then forfeit it again and again renew it and have it again allowed. So that under the statutes and decisions, a patentee today is expressly allow period of at least four years and six months for the postponement of the issue of his patent. In addition, under the present Rules of Practice (Edition of 1916, Rule 77) he is permitted a suspension of action on his apllication.

In the present case, the Court of Claims, although its "findings" do not find there was no authority, express or implied, in the Commissioner of Patents, to retain the allowed application in the secret archives, yet in its "Opinion" expresses the view that the action of the Commissioner was without authority of law, and this view of the case was evidently one of the grounds for reaching the conclusion of law adverse to the plaintiffs. (Rec., p. 30, line 17, p. 31, line 37, p. 35, line 4.)

The reply to the contention, if it be necessary to answer it, notwithstanding the lack of any finding thereon, is:

First, if Commissioner had no authority to retain the application, then he should have issued the patent at once.

Second, if the action was irregular the patent was then "wrongfully refused to be issued."

Third, if the action was irregular it was cured by the Act of Congress on which this action is based by fixing the date of the beginning of the quasi-patent on March 25, 1852, when it was "ordered to issue."

Fourth, it was done under authority of law, because of the implied authority of the Commissioner to establish a practice not inconsistent with the statutes and under the general authority of Section 1 of the Patent Act of 1836.

Fifth, although the practice was not embodied in a written or printed rule, it was an unwritten rule and a general practice as evidenced by the letter of Woodbridge of March 23, 1852, stating that information of this condition came from the Patent Office (Rec., 13), second, by the letter of the Examiner of January 29, 1862, not denying the practice, third, by the decision of the Board of Examiners-in-Chief (hereinafter printed in this brief) expressly recognizing the practice, and fourth, by reference to it in at least one suit in the Federal Courts.

Sixth, the court in discussing Section 8 of the Act of July 4, 1836, from the viewpoint of this section affording the basis for the suspension says, after quoting the section:

> "It is apparent that the terms of the foregoing statute do not authorize the secreting of applications for a patent *indefinitely.*" (Italics counsel's.)

But attention is called to the fact that Woodbridge in requesting the suspension of the issue, expressly stated: "If it is necessary to specify a particular time during which the patent shall remain in the secret archives, you will *please consider one year as the time designated by me.*" This is a direct compliance with the provisions of Section 8, quoted by the court.

It was the Commissioner, not Woodbridge, who agreed to hold it "indefinitely" when the former replied that the patent papers were filed "*subject to your directions as to the time of issuing the same.*" Woodbridge was evidently uncertain then, as are all of us now, as to the exact origin of or basis for the practice, but he brought his rights under the limitations of Section 8, if that was the basis. The Commissioner, however, drew the terms of the contract between the parties. And in justification of the attempt at repudiation of that contract the Court of

Claims, or any court, can cite no statute and no principle of law, whether patent law or any other kind.

However, the Court of Claims is probably in error in assuming that Section 8 of the Act of 1836 was considered as the basis for this practice. (Rec., 29.) That section related to the filing of applications, incomplete, because not accompanied by a model, as caveats. In the printed rules of the Patent Office in use in the fifties such section is reprinted in the rules under the heading "On filing the application as a caveat." See, also, opinion of Board of Examiners-in-Chief, hereinafter quoted.

Woodbridge's Conduct, Following the Order to Retain, up to December 31, 1861, *with Respect to the Question of Intention to Abandon His Invention or Right to a Patent.*

Following the postponement of the issue in conformity with Woodbridge's request and with the object that his ability to take out a foreign patent be not impaired, what did the inventor do that indicated his intention to abandon his invention to the public, and relinquish his expectation of its adoption, and compensation for its use under the property rights he secured by his patent? The burden of proof lies heavily upon the defendant to establish such intent by clear and affirmative evidence. *There is not a word in the findings of fact, supporting this defense.* On the contrary, they clearly and affirmatively support the opposite of the conclusion of law reached by the court.

In or about December, 1852, Dr. Woodbridge printed and published a pamphlet fully describing and illustrating his invention (Finding VIII, Rec., 20) and its operation, and quoting from the reports of the trials at Fort Monroe. By this pamphlet, he, for the second time, made

known to the Government, and to all officials thereof having power to influence its adoption, the nature and merits of his invention. He endeavored to educate and influence Army Officers and the public to an appreciation of the invention. He bombarded Congress repeatedly with his pamphlet (and also with petitions and interviews). But only the bombardment by the Confederate forces awoke the Government to the advantage of its use. These efforts continued from 1852 to 1861 as found by the Court of Claims. (Rec., 21.) The pamphlet was even placed in Woodbridge's patent application file. What more could he have done? The Government was his only customer. Demonstrations of the invention required a very large sum of money as stated by Col. Huger. Woodbridge by these efforts from 1852 to 1861 did everything in his power to make the invention available for the uses and needs of the Government and the protection of the country. The opposite of abandonment of an invention is introduction of it into public use. The Finding shows positively that Woodbridge did all he could do in meeting that requirement. What was the object of these efforts? The only common sense answer deducible from ordinary human conduct and human ~~nature~~ motives, is,—recognition and compensation. And, under the law, compensation could go only to a patentee since a patent established the only possible property right in a nonsecret invention.

But the point made by the Court of Claims against these efforts of Woodbridge, and the chief point of reliance for the conclusion of abandonment of his right to a patent, is that he did not state in this pamphlet that he had applied for a patent on the invention. (Rec., p. 21, line 6, p. 27, line 5 from bottom, p. 29, line 5, p. 29, line 21, p. 31, line 13, line 18, p. 34, line 19, line 29, p. 35, line

7, line 29, line 46, last line of page 35 and first three lines of page 36.)

This theory, as applied to the law of banadonment, is so novel, that it is difficult to answer it in the terms of statements of the law in adjudicated cases. If the Government had entered into the production and use of the invention and Woodbridge had stood idly by without attempting to assert and perfect his rights, the point would be pertinent. No such condition existed or is alleged to exist. However, an *explanation* of the reason why Dr. Woodbridge did not state in the pamphlet that he was the inventor or prospective patentee of the device, is that he was endeavoring to promote the introduction of the invention, and the recognition and compensation of the invention could come later. In direct reply to the point, Woodbridge had already informed the army officers and War Department in 1850 that he had invented the device and they recognized such fact in their reports. Moreover, the Government had constructive notice, as all are presumed to know the law and the Government must be presumed to have known that the inventor of the device, whoever he was, was entitled to apply for a patent thereon. The Government had to take the chance that every one does in making or using a new device, that a patent covering the same may issue upon a pending secret application. The Court of Claims states that our law does not recognize secret patents; the reply is made respectfully, that our law knows no such thing as a *public* application for patent.

DR. WOODBRIDGE'S REASONS FOR NOT ASKING FOR THE ISSUE OF HIS PATENT BEFORE DECEMBER 31, 1861.

The inventor's original purpose in postponement was preservation of ability to apply for foreign rights. At that time, he probably had reasonable hopes of inducing the Government to adopt his invention with reasonable promptness. When he met with no favorable response to his efforts of 1852 and 1853 he then decided to permit the application to remain in the Patent Office until there was a prospect of having it adopted and "rendered pecuniarily available to him" in order that the life of the patent might not be wasted before the world had grown up to the appreciation of his idea. This course was viewed with horror by counsel for the Government and was characterized as "lying in wait." Apparently the court below also considers such a motive reprehensible. If so, a very large proportion of the patents now in existence are invalid because of such condition. It is common practice for inventors, when their inventions are "ahead of their time" or when they are unable to immediately interest capital or when financial or eeconomic conditions are not ripe, to withhold the issuing of their patents to prevent undue waste of their terms. It is the exercise of proper, vigilant protection of his rights that any prudent man would adopt. The practice has been judicially sustained by this court in the Berliner case, and a striking example in the lower courts is the Selden case.

There was no injury to the Government in such course. The latter had not only not adopted the invention but in spite of the importunities of Woodbridge, had steadily refused to do so. He took the course of vigilance, of nonrelinquishment, of nonabandonment. Suppose that his patent had been issued in 1846, expiring in 1860 before

the beginning of the Civil War and then Woodbridge had asked for an extension of his patent and his claim had been referred to the Court of Claims. Would it not now be contended by the Government, that he was not entitled to an extension because he had been negligent in not protecting his rights by postponing the running of his patent term? It would have been said to him, "You need not have filed your application until there was a chance of having the invention adopted, or after filing your application, you could have abandoned it and later filed a new application. You were not vigilant in protecting your rights."

The almost insuperable obstacles that inventors outside of the Government meet with in attempts at the adoption of their inventions by the Government are of common knowledge. It is history that in the period immediately preceding the Civil War, the Government's officials, in respect to preparedness for war, were not only slumbering, but moribund. The court below has pictured the Government as an innocent victim of the patentee who lay in wait to spring upon it unsuspected. With whom are the equities? The Government, which in spite of two demonstrations of the invention, the complete disclosure of it to Congress and officers of the Government and the repeated importunities of the inventor and with full knowledge of his rights, deliberately and steadily rejected his invention when it considered it did not need it, and then, when an emergency arose, appropriated it; or the inventor who exploited the invention, made plain its advantages, persistently sought its adoption, and then was denied the fruits of his genius and efforts? The claimed ignorance of the origin of the invention by the Government and by subsequent improvement patentees and contractors, is im-

material as a matter of law, is unsupported by the evidence and is so extreme an assumption, in view of the wide publication of the invention, as to be incredible.

THERE WAS NO ESTOPPEL NO INTERVENING RIGHTS, AND NO STATUTORY BARS BETWEEN MARCH 25, 1852, AND DECEMBER 31, 1861.

The basis of abandonment where not express, is estoppel. There is no evidence or finding of any use of the invention by the Government or anyone else between March 25, 1852, and December 31, 1861. There were no intervening rights. There was no change of situation between the parties. If there were any applications filed in this period on which an interference with Woodbridge's pending application should have been declared by the Patent Office, such fact does not appear. And the sole knowledge of such applications and power to declare the interference rested with the Commissioner.

The court has included in its "findings" a general finding (No. X, Rec., 21) to the effect that during the pendency of the Woodbridge application, "a large number of improvements in projectiles was added to the art, among which were those disclosed by United States patents, as follows:" (followed by a list or 14 patents). The findings contain no other reference to these patents nor a statement of the ultimate fact, which they may be deemed to establish.

The only references to these patents in the opinion are on page 28 of the record, line 9; page 29, line 7 and page 35, line 10, where the Hotchkiss patents or one of them is referred to. They are not declared to constitute intervening rights and could not legally be so regarded.

It is certainly unnecessary for this court to analyze

each of these patents. It is sufficient to say as to their validity and scope that if their claims are drawn to the same invention as that of Woodbridge, they are void for anticipation both by the publication of Woodbridge's pamphlet and by Woodbridge's prior invention. If they are for distinct, subordinate improvements on Woodbridge's broad invention, then they were entitled to be patented and the issue of the Woodbridge patent prior to theirs could not have presented the issue of these specific improvement patents. Referring to the three Hotchkiss patents in the list, it will be seen that the latter condition exists. Each of the claims of each of these patents is directed to specific and distinct features not disclosed in the Woodbridge embodiment, although dominated by his broader claim. Woodbridge could not have made these claims of Hotchkiss and demanded an interference therewith. Of course, these patents could not confer upon Hotchkiss or the others the right to make, or sell, or use devices embodying the broad invention of Woodbridge without his consent. They merely gave these patentees the right to exclude others from making, using or selling embodiments of their particular inventions as covered by their specific claims.

Chicago & Alton Co. v. *Pressed Steel Car Co.* 243 Fed. p. 840, C. C. A.

Bloomer v. *McQuewan,* 14 How. 539, 548; 14 L. E. 532, 535.

Patterson v. *Kentucky,* 97 U. S. 501; 24 L. Ed. 1115.

Continental Paper Bag Co. v. *Eastern Paper Bag Co.* 210 U. S. 405; 52 L. Ed. 1122; 28 Sup. Ct. Rep. 748.

Crown Die & Tool Co. v. *Nye Tool and Machine Works,* U. S. Supreme Court, Oct. Term 1922; 67 L. Ed. 367, ... U. S. .....

Herman v. *Youngstown Co.* 191 Fed. 580.
Fuller v. *Berger,* 65 L. R. A. 381; 56 C. C. A. 588; 120 Fed. 274.
Swindell v. *Youngstown Sheet & Tube Co.* 230 Fed. 458.
Johnson v. *Cassman,* Fed. Case 7365, Vol. 13, Fed. Cases, p. 716.

See also *Wells & Hunter* v. *Honigmann* (District Columbia Court of Appeals, 1920, 280 O. G. 590; 267 Fed. Rep. 743), where it was held that the issue of a patent to others while Wells & Hunter's application, once allowed, lay forfeited in the Patent Office by failure to pay the final fee in time, did not work an abandonment. They did not constitute intervening rights.

As soon as Woodbridge learned of the prospective use by the Government of devices embodying his invention, which use if begun and continued was the only condition that could establish intervening rights, he *imemdiately demanded the issue of his patent.*

And no possible legal injury could have resulted to anyone from the issue of his patent at the time of his demand, because, he was still entitled at that time to a patent under the Statutes of 1836 and 1839. Following the refusal of the Examiner he could have filed a new application and there was nothing in the Statute to bar his patent. Thus Section 6 of the Patent Act of 1836, 5 Statutes at Large, 117, says:

"SECTION 6. And be it further enacted, That any person or persons, having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent,

in public use or on sale, with his consent or allowance, as the inventor or discoverer; and shall desire to obtain an exclusive property therein, may make application, in writing, to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor."

Section 7 says—

"and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the applicant's consent or allowance prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor, or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented, or described in any printed publication in this or any foreign country, as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him, briefly, such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification, to embrace only that part of the invention or discovery which is new."

See also Section 15.

None of the bars enumerated in these sections or in the Act of 1839 existed. If upon his new application the intermediate patents had been cited it would have been merely necessary under the Statute for Woodbridge to have shown that he had made his invention anterior to theirs.

This brings us to the Examiner's letter of refusal

dated January 29, 1862. If Woodbridge was entitled to a patent under the Statutes of 1836 on that date and the then pendency of his application was not inhibited by law then the issue of his patent was wrongfully refused by the Patent Office.

THE EXAMINER'S LETTER OF REFUSAL OF JANUARY 29, 1862.

Woodbridge was under no legal compulsion or obligation to ask for his patent within a certain time or before December 31, 1861, and he was entitled to rely upon the statement of the Commission that the application would be held "subject to his directions as to the time of issuing" the patent. The Patent Act of 1870 imposed a time limit of two years for actions by the applicant and the present statute limits the time to one year. But there was no time limit in the Act of 1836.

If the application was retained in the Office at the risk of the applicant what was that risk? First, that during the pendency others might manufacture or use some article embodying the invention covered by the claims. (*Woodbury Planing Machine Co.* v. *Keith,* 101 U. S. 479; U. S. Sup. Ct. Rep. 939; *U. S. Rifle & Cartridge Co.* v. *Whitney Arms Co.* 118 U. S. 53.) If such manufacture or use occurred it would be incumbent upon him to promptly ask for the issue of his patent. Second, if the Commisisoner notified him of an interfering application, it would be necessary for him to contest the issues and prove priority of conception and due diligence in reducing the invention to practical form.

But having established by diligent prosecution to official allowance by the Patent Office that he was entitled to a patent, there was no risk in mere lapse of time or delay in asking for the performance of the ministerial act of issuing the patent.

That there was no *legal* impediment to the issue of his patent in 1852 is clearly evidenced by the letter of Commissioner Halloway of January 4, 1862, replying to Woodbridge's request and stating that "your patent will be ordered to issue in pursuance of your request." That this was not a *pro forma* and unconsidered letter is indicated by the Commissioner's consideration of applicant's request for amendment of his specification.

Taking up the reasons advanced in the Examiner's letter of January 29, 1862, in refusing the issue, the Examiner alleges:

First, "the length of time you have permitted your invention to slumber is a bar to the grant of a patent at the present." An ignorance of the facts and an error of law. He had *not* permitted his *invention* to slumber but had strenuously and continuously kept it before the eyes of Congress and the public during the period the application was pending and had gone to West Point in 1861 in another effort to have it adopted.

Wrong in law because *mere* length of time could constitute no bar.

Second, the reference to Section 34 of the Printed Rules. A copy of this rule is not embodied in the Findings. It was to the effect that applications on which patents had been ordered to issue would not be retained in the secret archives for a longer period than one year. But it was not adopted until 1855 and could not be retroactive. If it had any bearing on the previously filed Woodbridge case, it was more binding on the Commissioner than on Woodbridge, and it was the former's duty alone to comply therewith.

Third, "you have suffered your application to remain locked up within the secret archives of this office—not merely beyond the reach of the public but beyond even

the conizance of the Examiners and other officers of this Department." This is pure nonsense. The only secret archives were the "confedential archives" referred to in Section 12 of the Act of 1836 relating to caveats and the "secret arhives" referred to in Section 8, relating to interfering applications and also to filing incomplete applications as caveats. Under both sections Woodbridge was entitled to notice of interfering applications, and the Examiners were obliged to be cognizant of pending applications to give such notice.

Fourth, the Britsih patents and one United States patent referred to. The same remarks apply to these patents as to those enumerated in Finding X. Moreover the devices of several of these patents are clearly not pertinent to Woodbridge's invention and not covered by his claim. As to Houghtin's United States patent, how or why was Woodbridge to take notice? It conveyed no right to make a certain thing; if new, it was valid, if the same as Woodbridge's, it was as effectively anticipated by his pamphlet as by his invention.

Fifth, "it is to the vigilant and not to the slumbering" etc. But it was the Government that had been slumbering.

Sixth, last and most important, the citation of Simpson's appeal to the Circuit Court of the District of Columbia.

Plaintiffs herein are entirely willing that their case shall be determined by rule of the Simpson case, as finally established. Such final decision was rendered by the eminent patent jurist, Mr. Justice Blatchford, in the celebrated case of *Colgate* v. *Western Union Telegraph Co.* 5 Fed. Cases, 85, which is hereinafter discussed and relied on in this brief.

Woodbridge then appealed to the Board of Examiners-

in-Chief and on July 10, 1862, the Board affirmed the refusal of the Examiner.

Their decision was not included in the findings by the court below, although plaintiffs moved that it be included, and excepted to the court's refusal to do so. It is important because it discloses that although it affirmed the decision of the Examiner, it rejected and disaffirmed his grounds and assigned another ground, *namely, public use of the invention.* And this ground was not only hearsay and unfounded in evidence, but a mistake of fact, as proved by a letter from the War Department to Woodbridge in evidence in the record below.

The decision of the board was by officers of the Government engaged in judicial duties and forms part of the Government records. It was promulgated by the Commissioner. Reference to it herein is therefore believed to be proper. The courts will take judicial notice of the records and actions of the heads of Departments and Bureaus of the Government.

York v. *Winans,* 17 How. 30; 15 L. Ed. 27.

Tower v. *U. S.* 21 Ct. Cl. 29.

Dorsey v. *Marsh,* 6 Fisher Pat. Cases, 394, Fed. Case No. 4014.

Laffan v. *U. S.* 122 Fed. 335.

Backas Steam Heater Co. v. *Simonds,* 2 App. D. C. 297.

The opinion of the board, including its decision is therefore printed in full as follows:

DECISION OF THE BOARD OF EXAMINERS-IN-CHIEF JULY 10, 1862.

"The alleged invention consists in applying to a projectile to be fired from a rifled cannon a ring or sabot of soft metal, for the purpose of giving to the projectile a rotary motion.

The iron projectile is made in ovoid form, and the rear section, from a point near the center to a point near the rear end, is surrounded by a soft-metal collar, cylindrical on its outer surface, but its inner surface fitting closely to the iron projectile.

The operation is thus described in the specification: 'A suitable charge of powder is to be introduced into the gun, and the ball and rifle ring placed in the position represented in fig. 1, the rear of the ball being in contact with the charge of powder. The surface of the rifle ring being exposed to the action of the gases formed by the inflammation of the powder, being much greater in proportion to its inertia than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly and thus impart the rifle motion which itself has received from the grooves of the gun, and at the same time it is stretched to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore.' The rear end of said ring, which is presented to the powder, is grooved so as to present thin edges of soft metal around the inner surface of the bore of the gun and the outer surface of the iron projectile, 'in order that the thin portions may act valvularly to prevent the escape of the gases between it and the sides of the bore and projectile.' In the drawings said soft-metal ring is represented as having projections to fit the grooves in the gun, and one of the claims is based upon said projections.

The first claim, however, is a broad one, to the use of the 'extensible metallic ring or sabot,' for the purposes above mentioned, without reference to the projections.

The application was originally filed Feb. 11th, 1852, and a patent was allowed and ordered to be issued on the 25th of March following. Two days previously to the allowance of a patent the applicant wrote to the office, requesting that upon the issue or order to issue of a patent it might be filed in the secret archives of the office, in order that his ability to take out a patent in a foreign country might not be affected by the publication of the invention, and stating that if it was necessary to specify a par-

ticular time during which the patent should remain in the secret archives the Commissioner would please consider one year as the time designated by him. To this letter the office replied on the 15th of April, 1852, informing the applicant that a patent had been ordered to issue on his application, and that in accordance with his request the papers had been filed among the secret archives of the office subject to his directions as to the time of issuing the same.

Here the matter rested until the 31st December, 1861, when the applicant addressed a letter to the office calling attention to the case, requesting leave to amend his specification, if permissible, and if not, the immediate issue of the patent without amendment. In answer to this application the examiner in charge informed the applicant that the length of time he had allowed his invention to slumber was a bar to the grant of a patent, referring to the 34th section of the printed rules, which prescribes that 'no application upon which a patent has been ordered to issue shall be retained in the secret archives more than six months from the day on which the patent was ordered to issue,' and alleging that the applicant had for nearly ten years, contrary to said rule, suffered his application to be locked up in the secret archives, not merely beyond the reach of the public, but beyond even the cognizance of the examiners and other officers of the patent department. The examiner also alleged that in the meantime various patents embracing the same invention have been issued in England and published for years in this country, referring in this connection to the English patents of C. C. Minie, May 31, of 1854; of A. E. L. C. Timmerhaus, of 1855, and of A. V. Newton, of 1856. He also alleged that the American patent of L. Houghton, of April 3, 1855, for the same device, had been for more than six years before the public.

The 34th section of the printed rules, to which the examiner refers, does not appear to have been in force at the time when this application was ordered to be deposited in the secret archives of the Patent Office. Even if it had been in force at that time, by permitting his application to remain in the

secret archives longer than six months the applicant would not necessarily have forfeited his right to a patent. When a patent has been ordered to issue, and the applicant requests, pursuant to this rule, that the application shall be deposited in the secret archives, it becomes the duty of the office, at the expiration of six months, to issue the patent if no further act is required to be done by the applicant to entitle him to the patent. But after the expiration of the time limited by the rule, if not before, the applicant abstains from taking out a patent at his own peril. If there were no rule limiting the time which such an application might be permitted to remain in the secret archives, we think it clear that it would remain there at the risk of the applicant from the time of its deposit at his request. What the exact character and extent of this risk might be under all circumstances it is unnecessary here to determine. It may be safely assumed, however, that an applicant for a patent, after it has been ordered to issue, is no more secure against the forfeiture of his rights while his application is lying in the secret archives of the Patent Office than he would be if his patent had actually issued and had passed into his possession.

A patentee with a patent in his possession may forfeit all his rights under it by permitting his invention to go into public use without objection or claim on his part. Judge Story, in *Wyeth et al.* v. *Stone et al.* (3rd Sto. 282), says: 'I agree that it is quite competent for a patentee at any time, by overt acts or by express dedication, to abandon or surrender to the public for their use all the rights secured by his patent, if such is his pleasure, clearly and deliberately expressed. So, if for a series of years the patentee acquiesces without objection in the known public use by others of his invention, or stands by and encourages such use, such conduct will afford a very strong presumption of such an actual abandonment or surrender.' Here the doctrine is clearly recognized by Judge Story that mere acquiescence by a patentee in the known public use of his invention by others may amount to evidence of the abandonment or surrender of his invention to

the public. Undoubtedly the evidence of such acquiescence, and for a considerable length of time, ought to be very clear to justify a presumption of abandonment. In fact, all the circumstances of the case ought to be such as can not reasonably be reconciled, consistently with the good faith of the patentee towards the public, with any other hypothesis than that of his intention to abandon or surrender to the public all rights guaranteed by his patent.

Tried by this test, how does the case now before us stand? The applicant applied for a patent in February, 1852, and on the 25th of March following his claim was allowed. No further act was required of him, and no further expense was necessary, to obtain his letters patent duly authenticated. At his own request, however, his application was deposited in the secret archives of the office, and there permitted to remain for nearly ten years. In the meantime the attention of foreign nations, as well as our own, has been constantly directed to the subject embraced in the application. Seldom during any period in the history of the world has any subject connection with the science of war attracted more attention and been productive of more experiments than the subject of making suitable projectiles for rifled cannon has during the very time that this application has been lying in the secret archives of the Patent Office. In these experiments the principle of the applicant's invention has been applied over and over again, and a number of patents have been granted in this country and in Europe for projectiles constructed and operating on precisely the same principle. Many of these experiments in which this principle has been tested have been publicly conducted by the Ordnance Department of this Government, and the results of them are matters of record in that Department.

The examiner has referred to only one American patent embracing the principle of the invention under consideration, viz., that of L. Houghton, of April 3, 1855. In this case a leaden sabot with a cavity corresponding in form to the hemispherical rear end of an elongated iron shot is forced forward by the explosive force of the powder upon the said rear end

of the iron shot, and thereby expanded so as to fill the grooves of the barrel. The claim allowed him is: 'The employment of a deep sabot at the base of the projectile, so as to be driven thereon, into the grooves of the gun, at the moment of the discharge, for rendering said grooves effective in producing the rotation of the projectile as specified.' It will be seen that this claim covers the identical principle embraced in the first claim allowed to the appellant, in 1852.

On the 13th of November, 1855, a patent (not referred to by the examiners) was issued to Sylvanus Sawyer, for a projectile with a leaden or soft metal sabot on its rear conical end, so that, in his own language, 'the force of the explosion acting in conjunction with the hard metal at the butt or rear end of the shell shall expand a portion of such anti-friction (soft) metal so as to press it firmly against the inner surface of the bore of the piece and cut off the passage of the flame by the shell or its leaden or anti-friction coating.'

Among other claims allowed him in the following: 'I also claim making the rear part of the shell tapering or conical as seen at a, a, combining therewith a ring or annulus b, b, of lead or its equivalent, the same being substantially in manner and for the purpose as hereinbefore specified.' It will be seen that this claim, also, covers the identical principle embraced in the first claim of the appellant. And this shot of Sawyer, it is said, was publicly tested by the Ordnance Department shortly after the allowance of his patent, and a report made thereon, which is matter of record in said Department.

On the 6th of August, 1861, a patent (not referred to by the examiner) was issued to Capt. John A. Dahlgren for a shot with a leaden sabot at its base, constructed and operating on the same general principle. In his specification Capt. Dahlgren says: 'When the projectile is discharged from a rifled gun, the force of the explosion of the powder first drives the soft bottom forward upon the conical or spherical rear end of the body of the projectile, which has the effect of compressing or wedging out the periphery of the soft metal bottom into close contact with the

rifled surface of the bore, filling the rifle grooves with the soft metal so as to prevent windage and compel the projectile in passing through the bore to rotate on its own axis, like a screw in the rifle grooves.'

The same principle has been claimed in several other applications which have been rejected, and perhaps is embraced in others which have been allowed. At all events, the principle upon which the first claim of the appellant is based is clearly embraced in all three of the patents above specially referred to, two of which patents have been in existence more than five years of the time during which appellant's application was quietly sleeping in the secret archives of the Patent Office.

It should be here remarked that the device covered by the second claim of appellant is also found in the patent of Sawyer, above referred to, as well as in several applications not referred to.

How the same device came to be patented, successively, to Houghton, Sawyer, and Dahlgren, is a mystery which we shall not attempt to explain. Indeed, we can not explain how it came to be patented to any one of them, in view of the previous application of Woodbridge, and the action of the office thereon, and the publicity which was given to his invention in 1852. We have before us in Woodbridge's file a printed pamphlet, published by him in 1852, giving a full description of his invention, amply illustrated by drawings, with an account in detail of experiments made with the shot at Fortress Monroe, by permission of the Secretary of War in 1850. This pamphlet, we are informed, was circulated quite extensively among members of Congress and other officers of the Government at the time of its publication.

However derelict the office may have been in patenting the same invention over and over again to different applicants, its dereliction in this respect does not help the case of the applicant now before us. It rather leaves him less excuse for his gross neglect in failing to take out his patent, if he ever intended to do so.

It may be alleged that, although several patents have been granted for the same invention, it does not necessarily follow that the invention has ever gone into public use. But we have already adverted to the fact that public experiments to test the principle of the invention have frequently been made by the Ordnance Department. Experimental use is the only use to which military inventions can be applied in time of peace; and we think that when an inventor succeeds in getting the Government in time of peace to make a public experimental use of his invention he has succeeded in introducing it to public use, in the sense in which that term is used in patent law. The appellant is presumed to have had a knowledge at least of the experiments publicly made under the auspices of the War Department officially reported upon and noticed in the records of the Department. If the appellant had taken out his patent at the time of its allowance, it would now have less than four years to run. If the patent is now issued it will have seventeen years to run. If an inventor after perfecting his application and procuring the allowance of his patent can, by delaying to take it out, wait until others have so introduced the invention to the public use and tested its practicability that it has actually become a public necessity, and then, by taking out his patent, secure the exclusive use of the invention for a full term from that date, he can take an advantage of the public which it is scarcely to be presumed it was the intention of the legislature to give him. If a patent could now be issued to the appellant for the remainder of the term which it would now have to run, if it had been issued at the time of its allowance, there would perhaps be no injustice in so issuing it. But to give him the exclusive privilege of using the invention for seventeen years from this date is so manifestly unjust toward the public that nothing short of a strict legal right to it, free from all reasonable doubt, would warrant the office in complying with his pending demand.

We do not base our objection to the issuing of the patent upon the ground of injustice to the subse-

quent patentees of the same invention. It appears to us that all such patents issued subsequent to the allowance of appellant's application and the publication of the printed pamphlet above referred to, in so far as they are based upon the same invention therein described, are necessarily null and void. But the public have rights which it is no less our duty to guard than the rights of individuals.

Under all the circumstances of the case, even if the patent had been issued at the time of its allowance, and the patentee had acquiesced, as he has done, in the use of the invention by others without setting up any claim under his patent, it is doubtful whether the courts would not hold, in pursuance of the doctrine laid down by Judge Story in *Wyeth* v. *Stone*, that his acts would raise a fair presumption of an abandonment or surrender of his rights to the public. But where an applicant for a patent, after prosecuting his claim to an allowance, refuses or fails for a series of years to take out his patent and acquiesces in the use of the invention by others, without interposing any objection or setting up any claim, the presumption of abandonment certainly becomes much stronger than in a case where the patent has been taken out.

It appears to us that the conduct of the appellant in this case has been such as to raise a strong presumption of a voluntary abandonment and surrender to the public of any rights which he might have secured by taking out his patent. There is only one other construction which we can reasonably put uopn his conduct; and that is, that he deliberately intended to take an undue advantage of the public by lying in wait until others should have, by a long series of experiments, demonstrated the utility of his invention, and then come in and secure a monopoly of its use for the full term of the life of a patent afterwards. We will not presume, however, that he intended to act in bad faith towards the public, when his conduct is equally reconcilable with an hypothesis perfectly consistent with his innocence and good faith.

It is therefore considered by the examiners in

chief that there is no error in the decision of the examiner, and the same is affirmed.

J. J. COOMBS,
J. H. HODGES,
T. C. THEAKER,
Examiners in Chief.

United States Patent Office,
July 15, 1862.

Sir: Your application for a patent for improvement in projectiles has been considered by the examiners in chief upon appeal, and they affirm the former action of the office, and decide that the application should be refused.

Respectfully, etc.,

.....
Commissioner of Patents, G. H. C. No. 1.

Wm. E. Woodbridge,
Perth Amboy, Middlesex Co., N. J."

In this opinion it will be seen that the Board recognizes the practice of placing the allowed application in the secret archives; rejected the citation of Rule 34 by the Examiner; held that the intermediate patents did not constitute intervening rights; that if Woodbridge's patent could have been dated from March 25, 1852 there would probably be no injustice in so issuing it (precisely what Congress has provided in the Woodbridge Act) but held that the invention had been in public use in the intervening period. This is the only reasonable ground set up for refusal in the two decisions. If true it might have an important bearing on the questions of estoppel and intervening rights. Although, to make it controlling it must have been shown that Woodbridge *acquiesced* in the use, expressly or implied by *Shaw* v. *Cooper*, 7 Peters. But the statement was *ex parte*, hearsay and unsupported by evidence. The erroneous impression or information of the Board is contradicted by letters from the Chiefs of Ordnance

of the War and Navy Departments in the record below stating that in respect to some of the alleged instances of use referred to by the Board, they were non-existent and as to the others they were purely experimental, and secret.

It is believed that it has been positively shown that under the facts and the law Woodbridge had not abandoned his invention or his application and the Patent Office was wrong in refusing his patent.

Discussion of Authorities Cited by the Court of Claims and Those Relied Upon by Plaintiffs on the Question of Abandonment.

The cases referred to by the Court in support of its position are as follows:

Woodbury Planing Machine Co. v. *Keith,* 101 U. S. 479, 488.

Egbert v. *Lippmann,* 104 U. S. 333.

Kendall v. *Winsor,* 21 How. 322.

In the *Woodbury Planing Machine* case, Woodbury filed his application June 3, 1848. It was rejected in 1849. In 1852 his attorney withdrew the application and the fee. In December 1870, 21 years after the rejection, Woodbury "renewed" his application. In 1854 and from then on planing machines containing his invention "was general," and many thousands of such machines were sold. The Supreme Court said:

> "This fact must have been known to him. Upon this subject the evidence is very full."

The Court in further referring to Woodbury's inaction and delay after this knowledge, said:

> "They spoke plainly of *acquiescence* in the rejection of his application for a patent."

And again:

> "If Woodbury did not intend to acquiesce in the rejection of his application, the rule was no bar to a movement by him to have it reinstated after its withdrawal. So he might have applied for a re-examination, or he might have appealed, or might have filed a new one. Thus he would have given notice that he did not intend to give up his invention to the public."

In the present case, the application was diligently prosecuted over rejections to an allowance; there was no acquiescence in any rejection; no manufacture or sale by others, no intervening rights, and no necessity to give any notice or to take similar action because Woodbridge was relying upon the statement of the office to hold the patent subject to his directions as to time of issue, while in the meantime, he was diligently endeavoring to make the invention pecuniarily available to him before the term of the patent ran out.

Egbert v. *Lippmann*, 104 U. S. 333, was a question of public use for more than two years prior to application with the consent and allowance of the inventor. He made the invention in 1855 and did not apply until 1866 and in the *meanwhile* "the invention had found its way into general and almost universal use." The court held that the patentee knew of this use.

This case in its facts and law clearly has no bearing on the present case.

Kendall v. *Winsor* was a case of a concealed invention, where the inventor first endeavored to protect his invention under the common law right to secret inventions and after a long period of such secrecy obtained a patent. The inventor had repeatedly declared that he did not intend to take out a patent but to rely upon secrecy. He invented the machine in 1846 and did not apply until 1854 and in the *meanwhile* the defendants

had learned of the machine and had copied. It was held that the evidence was sufficient to justify the conclusion that he "intended not to take out a patent."

That is not the present case. There was no secrecy on the part of Woodbridge, no "attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others." He disclosed it to the Government and proved its merit, and then disclosed it to the public. He fought for eleven years to have it adopted by the Government for the benefit and protection of the country.

In *United States Rifle & Cartridge Co.* v. *Whitney*, 118 U. S. 53, referred to by counsel for defendants, Cochran filed on January 10, 1859, was rejected February 8, 1859, withdrew his application and fee on February 20, 1860, and did not file again until May 6, 1868. In the meanwhile Cochran obtained twenty-two other patents relating to other inventions made by him. In this interval also eighteen patents were granted to others relating to similar devices and *the defendants had* manufactured under them. Here were intervening rights. In discussing abandonment, the court said:

> "There may be an abandonment of an invention to the public, as well after an application has been rejected or withdrawn, as before any application is made. Such abandonment may be proved, either by express declarations of an intention to abandon, or by conduct inconsistent with any other conclusion. An inventor whose application for patent has been rejected, and who, without substantial reason or excuse, omits for many years to take any step to reinstate or renew it, must be held to have acquiesced in its rejection, and to have abandoned any intention of further prosecuting his claim."

In the Woodbridge case there was no intervening manufacture or sale, no rejection and no acquiescence in

such rejection. In the Rifle Co. case the defendants had acquired equities, while at the same time, Cochran prosecuted numerous other applications and was constantly occupied in bringing to the attention of the War Department and the public other inventions of his *but never presented to them* the one in controversy.

Plaintiffs' Authorities.

The court below is correct in stating that plaintiffs rely upon *Colgate* v. *Western Union Telegraph Co.* 6 Fed. Cases, page 85, and *Smith* v. *Goodyear Dental Vulvanite Co.* 93 U. S. 486, 23 L. Ed. 952. But it omitted to mention or distinguish from the other case principally relied upon by plaintiffs, namely, *United States* v. *American Bell Telephone Co. and Emil Berliner,* 167 U. S. 226, 42 L. Ed. 144.

These cases have particular relation to the question of lapse of time between the allowance and request to issue the Woodbridge patent.

In the Colgate case, Simpson was the patentee whose application had been denied by Judge Dunlap in the case referred to and relied upon by the Examiner in his letter of refusal. The patent was subsequently granted and was adjudicated in the Colgate case.

Simpson's Case.

The two cases are parallel. In both cases the parties were brilliant inventors, and their respective inventions were of great public importance, and in both cases the utilization of the invention was limited to a narrow field of customers. Simpson's invention comprised a submarine telegraph cable consisting of a metallic wire encased in gutta percha. His invention made the sub-

marine cable successful. His application was filed January 31, 1848, and his patent was not issued until May 21, 1867. The period thus covered by the history of his application embraced that within which the Woodbridge case was pending.

The final adjudication of his rights was by Mr. Justice Blatchford (then Circuit Judge), the ablest and most experienced patent jurist of his time. This adjudication was in the case of *Colgate* v. *Western Union Telegraph Company,* 6 Fed. Cases, page 85, Case No. 2995, 15 Blatchf. 365, 4 Bann. & A. 36, 14 O. G. 943.

Simpson made his invention in 1846 or in 1847, and on January 31, 1848, he filed an application for patent but without any fee or model. On February 21, 1848, he filed another application. On April 2, 1849, he filed a new application with a drawing and model and fee. In 1849 the Patent Office finally rejected his application on the ground that the invention was disclosed in the applications of other parties. Simpson, like Woodbridge, personally conducted the prosecution of his application. On January 21, 1851, he requested the return of twenty dollars, his fee, as permitted by law. The application was not otherwise withdrawn. "He did not make any further communication to the Patent Office until November, 1858, nor did he renew his application for a patent until the 24th of December, 1858." In the interval he had an interview with the Commissioner of Patents, in 1853, in regard to his rejected application. On December 24, 1858, he filed a new application. On December 29, 1858, his application was rejected on the ground that insulating electrodes in gutta percha was well known and that the journals of France, England and this country for several years back fully treated the subject. In reply, Simpson made affidavit to the

fact that he had made the invention as early as November, 1847. Thereupon, the Patent Office rejected his application on the ground that the invention had been "abandoned to the public." Simpson replied to this rejection with an argument and the case was referred by appeal or assignment to the Board of Examiners in Chief or three officials in the Patent Office, who rendered a decision on January 22, 1859. This decision is quoted on page 93 of the Colgate case and is almost identical in its language and in its grounds of rejection with the decision of the Board in the Woodbridge case. It was alleged that the invention had been in public use during the pendency of his application and "that the fact that he has suffered for more than seven years (from January 21, 1851, to November 15, 1858), said invention so to be used without taking any steps to prosecute his claim to a patent, in law constitutes such use as having been made with his consent and allowance, thus, by his own act, working an abandonment of his invention to the public."

The recommended the final rejection of his application on February 2, 1859. This report was confirmed by the Commissioner of Patents. On October 8, 1859, he made another application for patent, accompanying it with an argument. On November 26, 1859, the Patent Office wrote him a letter admitting "there do not appear to have been just grounds for the rejection of your application, as per official letter of 1849, and, therefore, the patent * * * had the matter been pressed to a final decision then, * * * would have been granted, it is believed." But the Patent Office then again held to its position that the invention had been abandoned, and in 1860 the case being referred to a board of three in the Patent Office this refusal was again confirmed and in 1860 the Commissioner confirmed this report. In 1861,

he appealed to the Circuit Court of the United States for the District of Columbia, and the Commissioner's decision was affirmed by Judge Dunlop in the "case of Simpson" relied upon by defendant.

"During the years 1861, 1862, 1863, 1864 and 1865, Simpson was persistent in urging his application upon the attention of the then Commissioner of Patents, both personally and by letter." (p. 94.) "He also applied to Congress for relief," asking that a patent be ordered to issue for his invention, but such relief was not granted, although passed by the House.

On May 4, 1866, "Simpson filed the application on which the patent was granted." On August 15, 1866, the Patent Office again refused the patent on the ground that it was not competent for it to go behind the decision of Judge Dunlop. On appeal to the Examiners in Chief, the decision was affirmed on April 9, 1867.

The application was then examined by Mr. Hedrick, an Examiner in the Patent Office, who on the 7th day of May, 1867, made the following report to the Commissioner of Patents:

> "I have examined the arguments and papers in the application of George B. Simpson, for improved insulator for submarine and other telegraphic lines. I have especially examined the question of novelty at the time of the first application to the office, and find that the invention was then new, and was sufficiently important to entitle the applicant to a patent. I have also examined the papers submitted by the inventor to show that he never abandoned his claim, and only withdrew his application under protest, and that, therefore, nothing more than constructive abandonment can be made out against him. The whole case is a very extraordinary one. There seems to be no doubt, that the invention was one that deserved a patent, and that the inventor did what should have entitled him to a patent, and the office has, at various times, held that opinion, but

has always, either from mistake as to the character of the invention, as in the first instance, or from the idea that there was a constructive abandonment, refused it to him, whilst the inventor has at all times, and against all adverse opinions from official and unofficial quarters, asserted that he was entitled to and should receive a patent for his invention. This has been continued for nearly twenty years, until the invention is in general use and the public acting in the belief that the invention is public property."

Following this report to the Commissioner of Patents the patent was on the 10th day of May, 1867, ordered to issue and was issued on May 21, 1867. Simpson died in October, 1867.

The court, after relating this history of Simpson's application, says,—and the opinion of the court is hereby quoted *in extenso*, since it cites practically all the other authorities bearing upon this point and existing at that time, particularly the leading Supreme Court case of *Smith* v. *Goodyear Dental Vulcanite Company*, upon which plaintiffs herein also rely and to which the particular attention of this court is invited:

"Nor is there any evidence of any affirmative abandonment of his invention, betweeen October, 1849, and December, 1858. There is nothing but the lapse of time. As to that, the evidence shows that he was poor, during all that time. He might have taken an appeal from the decision of October, 1849, but the treatment he had received from the Patent Office, afterwards acknowledged by it to have been wrong and unjust, and the array of distinguished names in telegraphy, presented by the office to discourage him, with statements showing how greatly the office relied on information received from them, might well have deterred him from entering, at the time, on a further contest. The evidence shows, that, from 1849 to 1858, he was always poor; that he went to the Pacific Coast to better his pecuniary condition; and that he worked his way out there. Under all the circumstances, his application of 1858

must be considered, not as a new application, but as a continuation of his prior applications; and so must his applications of 1859 and 1866. From 1858 to 1866, the efforts of Simpson to procure the allowance of his claim to a patent were continuous and persistent, and no laches can be imputed to him, nor is any ground shown for holding that he abandoned his invention after 1858.

In *Adams* v. *Jones* (Case No. 57), Mr. Justice Grier says, that, by the application filed in the Patent Office, the inventor makes a full disclosure of his invention, and gives public notice of his claim for a patent; and that the delay afterward interposed by the mistakes or obtuseness of public officers, where gross laches cannot be imputed to the applicant, can not affect his right. In that case, an application was made in 1850, and was never withdrawn, and the patent was granted in 1857, and was sustained.

The case of *Dental Vulcanite Co.* v. *Weatherbee* (Case No. 3,810) was decided by Mr. Justice Clifford, on the Cummings patent of 1864, reissued twice in 1865. The first application was made in 1855, and it was, after three examinations, finally rejected on appeal, by the commissioner of patents, in 1856. It was not further appealed, and was not renewed till 1864, when a new application was filed, on which the patent was issued. In the interval between the filing of the original application and that of 1864, the invention had gone into use to a considerable extent, with the knowledge and consent of the applicant. There was no withdrawal of the application, and no evidence of an intent to abandon the invention, except inference from the above facts. It was urged in opposition to the validity of the patent, that Cummings had abandoned his invention, because, after the rejection of his application in 1856, he did not appeal or apply anew until 1864. In deciding on this point, Mr. Justice Clifford says: 'Strong doubts are entertained whether any new application was necessary; but, if it was, it is believed to be well settled, that the second application must be regarded as having been filed in aid of the first, on which the rejection

took place. *Godfrey* v. *Eames*, 1 Wall. (68 U. S.) 317. Actual abandonment is not satisfactorily proved.' The patent was sustained. The same judge made a like ruling on the same patent in *Goodyear Dental Vulcanite Co.* v. *Gardiner* (Case No. 5,591), and so did Judge Shepley, in *Goodyear Dental Vulcanite Co.* v. *Smith* (Id. 5,598), and Mr. Justice Hunt, in *Goodyear Dental Vulcanite Co.* v. *Root* (Id. 5,597), and Judge Emmons, in *Goodyear Dental Vulcanite Co.* v. *Willis* (Id. 5,603). The Supreme Court of the United States, in *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, sustained the Cummings patent against the same objection, holding that the application of 1864 was to be regarded as a continuation of the application of 1855. The case of Cummings was, in all substantial features, like the present case. He did not withdraw any part of the fee originally paid, but it has been shown, that withdrawing part of the fee, in the case of Simpson, is not to be regarded as a withdrawal of the application. The whole matter is summed up by Mr. Justice Strong, in delivering the opinion of the court, in the case last cited, in these words: 'We are not aware that filing a second petition for a patent, after the first has been rejected, has ever been regarded as severing the second application from the first, and depriving the applicant of any advantage he would have enjoyed had the patent been granted without a renewal of the application. The contrary was decided by the Circuit Court for the Southern District of Ohio, in *Bell* v. *Daniels* (Case No. 1,247), and in *Blandy* v. *Griffith* (Id. 1,529); and these decisions are founded in justice and sound reason.' It was proved, in the Cummings case, that, between the rejection of 1856 and the application of 1864, his invention had come into general public use. In the present case, there is no proof that any use in public of Simpson's invention was at any time made with his consent, allowance, or acquiescence.

In the case of *Johnson* v. *Fassman* (Case No. 7,365), an application made in 1856 was rejected in 1857, for want of novelty. The applicant took no further steps till 1866, when he took an appeal,

which resulted in the granting of a patent. Meantime, patents for substantially the same invention were issued to other inventors. During four of the nine years the applicant was a citizen of a state in rebellion. There was no withdrawal of his application. It was held that no direct or implied abandonment was shown.

In *McMillin* v. *Barclay* (Case No. 8,902), an application was made in 1855, and was finally rejected in 1856, on appeal to the commissioner of patents. It was not withdrawn, but nothing more was done in regard to it until 1867, when the specification was amended, and, on further consideration, a patent was granted. Judge McKennan held that there was no abandonment, express or implied, and that the lapse of time was satisfactorily explained.

In *Bevin* v. *East Hampton Bell Co.* (Case No. 1,379), an application was made in 1852 and rejected two months afterwards. The next month the applicant took from the patent office his application and all the papers connected with it, except one drawing, but made no formal withdrawal. He never returned those papers. For ten years he did nothing more. During that time the invention went into open and notorious use, in his own neighborhood and under his own eyes, and so continued for ten years, without remonstrance from him. He was not poor, and was engaged in a successful business. In 1862 he made a new application, and a patent was granted in 1869. It was held that he had abandoned his application of 1852. Great stress was laid by the court on the fact of the taking of all the papers from the patent office, and withholding them, and on the fact of such use of the invention, and on the fact of the absence of poverty. The present case differs from the Bevin case in the particulars just referred to.

The case of *Marsh* v. *Sayles* (Case No. 9,119) holds, that, where an application was rejected, and twenty dollars of the fee was refunded, and then there was a delay of eighteen years before the application was renewed, and no attempt is made to explain the delay, it will be held that there was an abandonment of the invention to the public. That is not the present case.

In *Consolidated Fruit Jar Co.* v. *Wright*, 94 U. S. 92, the invention was completed in 1859, and no application was made for a patent till 1868. It was held that the facts showed abandonment before the application. No sufficient reason for the delay was given. There was no proof of want of pecuniary means, and there was proof of use by the public for more than two years before the application. The case is unlike that of Simpson.

In *United States Rifle Co.* v. *Whitney Arms Co.* (Case No. 16,793), the answer is set up, as a defense, that the patent was applied for in 1868, and that the invention had for more than two years before that date been in public use and on sale with the consent and allowance of the inventor, Cochran, and that, prior to that date, it had been abandoned to the public. Cochran applied for a patent for the invention, an improvement in breech-loading guns, in 1859. It was rejected within a month. He took no appeal from the rejection by the primary examiner, and, one year and twelve days after the rejection he withdrew the application and received a refund of $20. In 1868, he filed a new application, which was rejected on the ground of abandonment. The commissioner affirmed such decision, but it was reversed by the Supreme Court of the District of Columbia. The commissioner then declined to issue the patent, but, after the passage of the Patent Act of 1870 (16 Stat. 198), a new application was filed, and a patent was issued. During the eight years from 1860 to 1868, Cochran obtained 22 different patent, on his own application, 9 of which related to breech-loading firearms. He prosecuted his other inventions with constancy and energy. The court held, that no poverty was shown as a reason for not renewing and pressing his application; and that, if it were, it would tend greatly to dispel the idea of laches. Stress was laid in that case, by the court, on the withdrawal of the application, and the patent was held to be invalid. The decision in that case is not of weight in reference to the facts of Simpson's case.

On all the points in issue, it must be held, that the plaintiff has established his case, and there must be the usual decree for the plaintiff, for an injunction and an account, with costs."

Following this adjudication by Judge Blatchford a compromise was entered into between Colgate and the Western Union Telegraph Company whereby the latter paid Colgate one hundred thousand dollars for a release and license, according to the note in Fed. Cases.

The case of *Colgate* v. *Western Union Telegraph Co. supra,* and *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, 23 Law Ed. 592 (see that part of the court's opinion on page 956) are conclusive in favor of the plaintiffs herein upon the point that he did not abandon or forfeit his right to a patent and that said patent was wrongly refused to be issued.

The reason why the Patent Office went wrong on this point in the Woodbridge case was probably owing to that fact that the law as to abandonment, particularly in respect to the point that abandonment cannot be presumed but must be proved, and involves the element of dedication to the public and rests upon the principle of equitable estoppel, had not been fully expanded and established by the courts at the time of the refusal of the Woodbridge patent. This unsettled condition of the law on this point is adverted to in several patent opinions in Federal cases.

The Berliner Case.

In the case of the *United States* v. *American Bell Telephone Company and Emile Berliner* (167 U. S. p. 226, 42 Law Ed. 144), suit was brought by the United States to cancel and set aside the Berliner Telephone patent on the ground of undue and fraudulent delay in the prosecution and issue of the patent on the application. The application had been pending in the Patent Office for a period of thirteen years. The Government contended (synopsis of argument in report):

"That the delay of the application in the office

for thirteen years was, under the circumstances alleged in the bill, unlawful and fraudulent. * * * The delay in the office is the great fact in the case. It determined the bringing of the suit, stands in the forefront of the bill, was the principal question argued in both courts below, and occupies the chief space in the decisions rendered. It is not set up as laches, nor as a ground of forfeiture under any provision of the law or rule of the Patent Office, but as a course of conduct in the nature of fraud on the public."

In the first sentence of the opinion of the court (by Mr. Justice Brewer) it is said:

"This is a suit by the United States to set aside a patent for an invention as *wrongfully issued.*"

The Berliner case would thus be the same as the Woodbridge case if the Woodbridge patent had been actually issued in 1862, and then the United States had brought suit to set aside the patent on the ground that it had been *wrongfully issued* in view of the delay in the Patent Office from 1852 to 1861.

The court in the Berliner case, after discussing the distinction between patents for land and patents for inventions and the "weightier reasons" why the Government should not be permanently deprived of the property through land patents, and then discussing the arguments of the Government in support of the suit, says in describing the practical effect of the delay on the Berliner application in the Patent Office:

"In other words, the telephone, as we use it—that which has become an important factor in the commercial and social life of to-day—does not embody simply the invention of Bell, but also those of Edison, Blake, and Berliner. So that while the public has to-day, by reason of the expiration of the Bell patent, the right to use as it pleases his invention, such right is a barren one, and the telephone monopoly is practically extended to the termination of the Berliner patent. And this exten-

sion of the time of the monopoly has been accomplished by means of the delay in the issue of the Berliner patent, the long pendency of the application in the Patent Office."

The court discusses the contentions of the Government's counsel, and then says (42 Law Ed. p. 156):

"Neither can a party pursuing a strictly legal remedy be adjudged in the wrong if he acts within the time allowed, and pursues the method prescribed by the statute. If the statute gives him five years within which to bring an action on a note he cannot be denied relief simply because he waits four years and eleven months. If he has two years after a judgment against him within which to take an appeal he may wait until the last day of the two years. Under U. S. Rev. Stat. No. 4886, an inventor has two years from the time his invention is disclosed to the public within which to make his application, and unless an abandonment is shown during that time he is entitled to a patent, and the patent runs as any other patent for seventeen years from its date. He cannot be deprived of this right by proof that if he had filed his application immediately after the invention the patent would have been issued two years earlier than it was, and the public therefore would have come into possession of the free use of the invention two years sooner. The statute has given this right, and no consideration of public benefit can take it from him. His right exists because Congress has declared that it should. It will not do to say that because Congress has declared that seventeen years is the life of a patent, seventeen years is the limit of the possible monopoly; for the same legislation that gives seventeen years as the life of a patent gives two years within which an application for a patent may be made, and during that time, as well as while the application is pending in the department the applicant has practically, if not legally, an exclusive use. A party seeking a right under the patent statutes may avail himself of all their provisions, and the courts may not deny him the benefit of a single one. These are questions, not of natural, but of purely statutory right. Congress, instead of fixing seventeen, had the power to

fix thirty years as the life of a patent. No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public."

And again:

"Certain rules of procedure has been prescribed by the Commissioner of Patents, and a certain routine of practice has become established in that department. Now, all these matters of statutory enactment, rules of procedure, and routine of practice, are things over which an applicant has no control. When he has once filed his application, complying with the statutory requirements, then the Patent Office takes possession of the matter. It determines when and how it will act, and the applicant can only ask and wait.

And why should he be called upon to do more? He comes before the tribunal which the Government has established and presents his application. Why should the validity of the grant which that tribunal finally makes depend in any degree upon the number of times he has repeated his application? The true rule is that if application has been made and the applicant has once called for action, he cannot be deprived of any benefits which flow from the ultimate action of the tribunal, although that tribunal may unnecessarily, negligently, or even wantonly, if that supposition were admissible, delay its judgment. If the public is interested in prompt action, if the Government which represents the public thinks that more speed on the part of any of its tribunals is essential, it is the Government which is called upon to act, and the applicant may with propriety wait until either the tribunal has acted or until the Government, having regard for the public interest, has interfered to compel action. Accepting the statement of counsel as to the facts to be corrected in all its fullness, consider what would have been the ruling of a court if an application had been made to it based upon those facts. Suppose the applicant had presented its petition for a mandamus to compel prompt action on the part of the patent officials and said, 'I have applied for and

am entitled to a patent. It will be issued after a while without any judicial compulsion. I can make large profits if the Patent Office will be dilatory and yet I ask a mandamus to compel its immediate action,' would not the ruling have been, 'By your own showing you are entitled to no relief; you have no cause of complaint, it is the Government representing the public which alone can complain.' And if it could obtain no assistance by a suit in advance, can it be punished indirectly by being deprived of that which was finally awarded to it?"

And again:

"Counsel seems to argue that one who has made an invention and thereupon applies for a patent therefor occupies, as it were, the position of a *quasi* trustee for the public; that he is under a sort of moral obligation to see that the public acquires the right to the free use of that invention as soon as is conveniently possible. We dissent entirely from the thought thus urged. The inventor is one who has discovered something of value. It is his absolute property. He may withhold the knowledge of it from the public, and he may insist upon all the advantages and benefits which the statutes promise to him who discloses to the public his invention. He does not make the law. He does not determine the measure of his rights. The legislative body, representing the people, has declared what the public will give for the free use of that invention. He cannot be heard in the courts to say that it is of such value that he is entitled to a larger and longer monopoly; that he is not fully compensated for the great benefit which his invention has bestowed by the pecuniary receipts during seventeen years. No representative of the public is at liberty to negotiate with him for a new and independent contract as to the terms and conditions upon which he will give up his invention. He must come under the dominion of the statute, and take that which the public has proferred its willingness to give. As the lawmaking power has prescribed what the public will give, specified the terms and conditions of purchase, indicated the time and methods of determining the right of compensation, he on his part

> has an absolute legal right to avail himself of the provisions thus made. It is not of course doubted that the courts in construing the patent, as all other statutes, must have regard to the spirit as well as the letter. That simply requires that courts shall ascertain their true meaning, but when that is ascertained the applicant for a patent is entitled to all the benefits which those statutes thus construed give."

And in reference to the point that if there was any compulsion upon Woodbridge to take out the patent within a definite time (not specified), he did so specify the time of one year when he requested the application to be placed in the secret archives, the language of the court is pertinent, in referring to the request of the attorney for Berliner in that case, to have action on the application expedited, and the criticism of the Government counsel thereon that such request was not thereafter reiterated:

> "But is the applicant to be condemned because, having once made an urgent request for action and pointed out reasons therefor, it was not continually repeating that request, because it did not see that such request was placed on the files of this particular application, or, as intimated in the words of counsel, nailed on the door of the Patent Office?"

If there was no extra-statutorial and quasi-trusteeship duty imposed upon Berliner and the Bell Telephone Company in the above case, to hasten the issue of the patent, then there was no duty of that nature imposed upon Woodbridge in this case.

The doctrine enunciated in the Berliner case has been followed and emphasized by the Circuit Court of Appeals for the Second Circuit in the case of *Columbia Motor Car Company* v. *C. A. Duerr & Company,* 184 F. R. 893, decided January 9, 1911, in the suit on the celebrated Selden automobile patent. The application for this patent was pending in the Patent Office for six-

teen years. The defendant sought to have the patent held invalid on the ground of delay and abandonment in the Patent Office. The court said:

> "This patent was applied for in 1879 and granted in 1895. For over sixteen years the application lay in the Patent Office and the applicant took full advantage of the periods of inactivity permitted by the rules and statutes. It is apparent that he delayed just as long as possible the issue of the patent to him. During this long time the automobile art made marked advances along different lines, and when, in 1895, the patent was granted, it disclosed nothing new. Others had then made the patentee's discovery and had reduced it to practice in ignorance of what he had done. While he withheld his patent, the public learned from independent inventors all that it could teach. For the monopoly granted by his patent he had nothing to offer in return. The public gained absolutely nothing from his invention, whatever it was. From the point of view of public interest it were even better that the patent had never been granted. Judge Hough was quite within bounds in saying:
>
> 'No litigation closely resembling these cases has been shown to the court, and no instance is known to me of an idea being buried in the Patent Office while the world caught up to and passed it, and then embodied in a patent only useful for tribute.'
>
> It is urged that we should regard unfavorably the patent on account of this delay in the Patent Office, should seek to avoid giving it a broad construction, and should permit the alleged abuse of the law to weigh against the standing of the complainants in a court of equity. But the patentee acted wholly within his rights. He merely took advantage of the delays which the law permitted him. He followed strictly the statutes and rules of procedure, and the courts cannot exact a greater measure of diligence from him. When the patent was granted under the authority of the law, it became entitled to the consideration accorded to any other patent. If the statutes and rules permit unnecessary delays, they should be changed; but we reject the view that this court owes any duty to relieve against their

operation. This patent, even if it be useful only for tribute, must be viewed without prejudice and with absolute judicial impartiality." (See also *Crown Cork & Seal Co.* v. *Stopper Co.* 108 F. R. 845, C. C. A. 2; *Smith* v. *Dental Vulcanite Co.* 93 U. S. 502, 23 Law Ed. 953.)

SMITH v. DENTAL VULCANITE CO.

This case is so apposite to plaintiffs that it requires no comment except to point out that there was an interval of *eleven years* from the date of rejection of Cummings' application to the date of renewal thereof.

The Court of Claims has sought to point a distinction, unfavorable to Woodbridge, between his case and some of the authorities, to the effect that Woodbridge's application was allowed and the others were rejected. But, it is submitted, there is a much stronger presumption of abandonment in the latter case than the former, as in one there is an acquiescence in the adverse holding that the applicant is not entitled to a patent, while in the other there is a reliance upon the holding that the invention is patentable and upon the promise to issue when requested.

All these early cases show that it was the accepted practice to keep the application in the office for very long periods without acting thereon and that when the question of abandonment came up in the court actions thereon, the test applied was, was there acquiescence in the manufacture or sale or use by others of devices embodying the invention?

FINDING XIV NOT TRULY A FINDING OF FACT, BUT A CONCLUSION OF LAW AND TO BE SO TREATED.

The Court of Claims after deciding as stated in Finding XIII that Woodbridge was entitled to a patent on his invention on March 25, 1852, holds that the Government did not infringe the claims of the application. This holding is contained in Finding XIV. Plaintiffs duly excepted to this conclusion being stated as a finding of fact, and moved that it be stricken out and incorporated in the conclusion of law or opinion or judgment. The overruling of this exception has been assigned as error in plaintiffs' assignment 14. What the holding means is, not that the Government did not use projectiles having some forms of soft metal sabots, because it specifically finds that it did in Finding XII and the appendix thereto, but that the claims (claim 1 only is in issue) are construed by the court as so limited by their term or the prior art or both as not to cover the projectiles which the Government used.

The question of infringement is always either one of mixed fact and law or of law alone, the question of fact being what did the defendant make or use and the question of law what do the claims mean in the light of their terms and as restricted by the prior act or by amendments. The latter point, involving the construction of a written document, the patent, is always one for the court, as distinguished from the jury, a point of law alone. Where the facts are plain and undisputed the question is one of law alone.

The leading case on this point is *Singer* v. *Cramer*, 192 U. S. 265, 24 Sup. Ct. 291, 48 L. Ed. 437.

> "In *Western Electric Co.* v. *Robertson*, 142 Fed. 478, Circuit Court of Appeals, 2nd Ct., the court,

speaking by Judge Townsend, one of the most learned patent jurists of the country, said:

'Where the question of infringement depends entirely upon the construction of a patent either upon its face or in connection with facts of such a nature and effect that they cannot be denied or are such as not to be reasonably disputed, the question is one of law for the court. *Deloriea* v. *Whitney*, 63 Fed. 611, 11 C. C. A. 355; *Black Diamond Co.* v. *Excelsior Co.* 156 U. S. 611; *Singer Co.* v. *Cramer*, 192 U. S. 265, 24 Sup. Ct. 291, 48 L. Ed. 438.'

Referring to the opposing cases, in *Royer* v. *Schultz Belting Co.* 135 U. S. 319, 10 Sup. Ct. 883, 34 L. Ed. 214, there was a conflict of evidence as to the facts; in *Heide* v. *Panoulias*, 188 Fed. 914, 'there was conflicting testimony as to both invention and infringement.' "

In the present case not only are the facts as to what the defendant used undisputed between the parties, but they are conclusively found by the court which has annexed to Finding XII drawings of the Government projectiles and given the court's own description of these devices. On the other hand, as appears from the opinion the court has gone so far in legally construing claim 1 of the quasi-patent, the only claim alleged to be infringed, as to read into the same a feature not expressed in the terms thereof. It is therefore believed that this court will consider Finding XIV as a conclusion of law, open to the review of this court and not as a binding finding of fact. See *U. S.* v. *Clark*, 96 U. S. 37, 24 L. Ed. 696.

It is to be further noted that plaintiffs assigned as error that there are no facts to support the conclusion in said finding, or the facts are not sufficient to support said finding.

INFRINGEMENT.

The conclusion of the court below that the Government projectiles do not infringe claim 1, comes as a great surprise to plaintiffs. If affirmed, then this case will have come to a most lame and impotent conclusion. The court holds that all that Woodbridge invented was the projections on the sabot adapted to fit into the rifle grooves of the gun. Of course, the defendant's projectiles do not have this feature. If this view prevails, what was supposed generally to be a historic invention, of an epoch making character, descends to the plane of a trifling detail improvement of doubtful invention and doubtful utility. It is an invention for which neither plaintiffs, nor Dr. Woodbridge, nor the numerous counsel of the claimants would have lifted a finger to claim compensation. It brings this claim and the litigation thereon, with the accompanying long and earnest consideration of the equities and law points of this claim by the ablest lawyers the Senate has ever possessed, careful reviews and independent considerations by the House, the entry into the case of numerous counsel, several of whom were of distinguished reputation, the expenditure of a large amount of money, time and energy in proving and presenting the case in court, and the testimony of the ablest patent ordnance experts and ablest and most distinguished ordnance experts, Admiral O'Neill, Gen. Crozier, Gen. Butler, Gen. Mordecai —to an absurdity.

Such a conclusion is in direct contradiction to the conclusion reached by every tribunal that has had to pass on this question. Congress would not have taken notice of the invention unless it was plain that the claim applied to defendant's devices. The ground that the claim if issued would cover devices like defendant's was the

principal ground of the Examiner's refusal of the patent, the board's affirmance and the decisions of the Commissioner and District of Columbia Supreme Courts affirming such decision. If it wasn't a broad claim of this character the patent would not have been refused and this claim would not have been here. The patent claim was expressly stated by the Examiner making a report to the Commissioner in 1879 to be a broad claim covering the sabot either with or without projections and covering defendant's devices. It was admitted by defendant's own expert in the Court of Claims case that it applied to a sample shell like Woodbridge's but not having projections, whether such shell be used in a rifled gun or a smooth-bore gun.

If the conclusion were based on evidence produced for the first time before the Court of Claims it might possess some force. But this is not the case. The court merely relies upon the amendment to his claims made by Woodbridge and the alleged prior art cited by the Examiner in the prosecution of his application, all of which were matters of record from the beginning and known to and considered by each of the tribunals above named!

Moreover the conclusion is contradicted by the court's own descriptions of the projectiles of the Government plus its own opinion as to the scope of the invention, as will presently appear.

Claim 1 of the allowed Woodbridge application is as follows (Rec., 13):

> "First, The construction of an extensible metallic ring or sabot as above described and placed in the rear of the projectile, for the purpose of diminishing the windage and giving the ball its motion in the direction of the axis of the bore."

The consideration of the meaning of this claim involves some understanding of the general history of the

art and the place which Woodbridge's invention occupies therein.

The Woodbridge Invention.

Dr. Woodbridge was one of the most eminent and brilliant ordnance experts and inventors of his time.

He was the inventor of the wire-wound gun, and so recognized by the British Admiralty. (See Brit. Ency., 11th Edition, Vol. 20, p. 193.) Such guns are used to this day by the British Navy.

The United States Government thought enough of this idea to spend thousands of dollars in experiments thereon. (See War Department Ordnance Report No. 1887.)

He was the inventor of the piezometer, an instrument for determining powder pressures in guns. (Appleton's Cyclopaedia of Applied Mechanics (1881), p. 479, where Dr. Woodbridge is referred to by name.)

He was an industrious experimenter in the field of ordnance and the author of numerous scientific treatises upon the results of his experiments and investigations, including a work on powder pressures in cannon officially adopted and published by the United States Army Ordnance Department as part of the official "Ordnance Notes" and reprinted in the London Engineeer, a foremost scientific journal.

A report by him in 1885 on experiments on the mechanical properties of steel was published as a separate volume by the Ordnance Department of the Army. In 1884 and 1887 he was invited by the secretary of the Institution of Civil Engineers in London to contribute articles on the construction of wire-wound guns and the properties of steel. A method of obtaining the position of centers of gravity in guns was prepared by him, was

copied, translated and published in a titled Austrian publication. He was elected a member of the U. S. Naval Institute.

It may be here stated, although not part of the record herein but of official record in the Navy Department, that as late as 1898 Dr. Woodbridge was employed by that department in experiments designed to improve the time fuses then in use.

The publications referred to have not been formally offered in evidence in this record, since they do not bear directly upon the issues herein and were (or most of them) referred to in the deposition of Dr. Woodbridge merely in support of his qualifications as an expert witness.

The invention involved here was not, then, the chance thought of an occasional inventor, a mere paper invention of undemonstrated practicability and value, but the product of the highly trained and inventive mind of a scientific as well as practical specialist in the line of ordnance.

Referring to the Woodbridge application (Rec., 10) the petition states that the petitioner "has invented a new and useful improvement in rifled ordnance." In the specification, he says: "The nature of my invention consists in applying to a projectile to be fired from a rifled gun a rifle-ring or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion." This rifle-ring or sabot, as he further describes, consisted of a ring of extensible metal adapted to be expanded by the action of the gases of the powder charge into and against the wall of the gun so as to fill the bore thereof. This action of the ring resulted in closing the bore against windage and gave the projectile a motion in the direction of the axis of the bore of the

gun and stretched the ring against the wall of the rifled bore, thus filling the grooves of the rifling, with the consequent result of rotating the projectile, as the same was driven through the gun.

Prior to the date of Dr. Woodbridge's invention, which was in 1850, neither elongated projectiles for ordnance, nor rifled ordnance itself had been in practical and successful use. Proposals had been made to rifle ordnance and to use elongated projectiles therein with means to engage the rifling of the guns in order to impart thereto the rifle motion. These prior proposals and experiments are referred to in the Treatise on Ordnance and Armor by Alexander L. Holly, New York, D. Van Nostrand, 1865. (See also Appleton's Cyclopaedia of Applied Mechanics, Vol. 2, 1881, p. 479, by D. Appleton & Company, and Ency. Brittanica, 11th Ed., Vol. 20, pp. 197-199, and also in the Woodbridge pamphlet of 1852, in which publication Dr. Woodbridge refers to the prior proposals. These publications refer to experiments made in Russia in 1836 by Montigny, a Belgian, which it is stated were not a success. It is not known from these publications exactly what the Montigny invention was. In 1845 Major Cavalli, a Sardinian officer, experimented with a breech-loading cannon which was rifled with two grooves for an iron shot and in which he proposed to use an elongated projectile with two ribs cast in it to fit the grooves, but no means were taken to prevent windage.

In 1846 Baron Wahrendorf of Sweden tried lead-coated projectiles, the coating being attached to the projectile by means of grooves under the outside of the shell. In this construction the lead was compressed into the grooves. It had also been proposed to use circular studs on the projectile adapted to loosely engage the grooves. This was known as the stud system and was referred to by Dr. Woodbridge in his pamphlet. Experi-

ments had been made with all these plans and none had proved successful prior to the Woodbridge invention.

Including these projectiles experimented with before Woodbridge, and those developed subsequently, projectiles for ordnance may be divided, according to their means for giving the rifle motion, into three classes—the "stud or form," the "compression," and the "expansion" systems.

Holly, *supra;*
Appleton's Cyclopaedia;
Encyclopaedia Britannica.

In the "stud, form or centering" system, the engagement with the gun rifling is obtained by a formation carried by the projectile for mechanically fitting the bore of the gun, as by (1) providing the projectile with planed faces, as for instance the hexagonal shell of Whitworth, or (2) with ribs, or (3) with circular studs which enter the spiral rifle grooves in the gun.

These projectiles could be used with either muzzle-loading or breech-loading guns, but when used with the former had the objection of the difficulty of entering the projections into the muzzle and ramming the shell home, and many attempts were made to overcome this objection. They possessed the further disadvantage that, having purely a mechanical fit in the grooves, they would not close the bore against windage.

The "compression" system comprises projectiles having either (1) a lead coating on the projectile larger than the bore of the gun and adapted to be compressed by the bore into the grooves upon the explosion, (2) a circular driving band of copper, also larger than the bore and adapted to be compressed into the grooves. This is sometimes known as the "Krupp" system. In both forms of the compression system the projectiles could, of

course, be loaded only at the breech. During the period covered by the Woodbridge claim nearly all guns were muzzle loaders. Another objection to the first form was the dangerous stripping of the projectile coating. The second form of the compression system is the present construction in use for all shells. Of course all modern guns are breech loading.

The expansion system comprised a ring, cup or sabot of extensible metal softer than the body of the projectile and fixed on the rear end thereof and no larger than the bore of the gun and adapted to catch the gases of explosion, and be expanded by them against the bore and into the grooves, and so stretched as to fill the bore and thus prevent windage and also center the projectile and thereby give it a motion in the direction of the axis of the bore, and also impart the "rifle" or rotary motion to the projectile.

The Woodbridge projectile belongs to the expansion system of projectiles for cannon, *and Woodbridge was the pioneer in that system.*

THE SPECIFICATION OF THE WOODBRIDGE APPLICATION AND THE PARTICULAR MECHANICAL FORMS IN WHICH THE APPLICANT STATES THE INVENTION MIGHT BE EMBODIED.

An invention is distinct from any particular physical embodiments in which the invention may be expressed.

An invention is an intellectual conception of means adaptable for and capable of producing a new and useful function. The concrete form of such conception may, of course, be carried out in various ways and by various instrumentalities. This principle, of course, is particularly familiar in the application of the doctrine of mechanical equivalents where a cam may be the equiva-

lent of a lever or a spring—the equivalent of a weight, for example.

In his specification, Woodbridge first proceeded to describe the broad idea of the extensible metal ring adapted to be expanded against the inner surface of the gun to fill the bore thereof completely. He says in the beginning of his specification that the nature of his invention

> "Consists in applying to a projectile to be fired from a rifled gun a rifle-ring, or sabot, in the manner hereinafter described, for the purpose of giving to the projectile the rifle motion."

Thus he makes it plain that this circular or shoe-like member constitutes the essential idea of the means for performing the desired function.

He then proceeds to describe generally the construction and material in this ring, and says:

> "It is a ring of metal, softer than the ball or cannon, and capable of extension without rupture, whose exterior surface has the form of the bore, but sufficiently smaller to allow it to be readily introduced into the gun; and the inner surface of which fits the surface of the ball in the rear of its greatest diameter."

Although this description is thus general, he is particularly referring, as indicated by the preceding sentence, to the exact form of the projectile and ring illustrated in the drawing and designated by reference characters. Still continuing to refer to this specific illustration, he goes on to say:

> "Its rear end is grooved, as shown in the section (Fig. 4), in order that the thin portions may act valvularly to prevent the escape of the gases between it and the sides of the bore and projectile."

The action of the ring is then described. He says:

> "The surface of the rifle ring exposed to the action of the gases formed by the inflammation of the

> powder being much greater, in proportion to its inertia, than that of the ball, the ring is driven forcibly forward upon the ball so as to embrace it tightly, and thus impart the rifle motion which itself has received from the grooves of the gun; *and at the same time it is stretched* to fill the bore of the gun completely, thus destroying the windage and causing the ball to advance strictly in the line of the axis of the bore."

He then proceeds to describe a suitable composition for a ring of the proportions represented in the drawings and for a certain charge of powder. The specification then describes the possibility of use of the ring and the adoption of such use for spherical or other shot in *smooth-bored* guns, in connection with which he says the ring will avoid "the loss of force by windage, and for giving the ball its motion in the direction of the axis of the bore of the gun." In describing this possible use of the invention in smooth-bored guns he refers for the first time to the projections on the ring, indicated in the drawings, stating, in effect, that they are dispensed with—in the words: "but without the projections for the grooves of the gun."

Of course, these projections would be unnecessary to the convenient insertion of the shell of a smooth-bored gun and would be objectionable as affording open spaces between the same. He then claims:

> "The application for (of) rifle ring or sabot, constructed substantially as herein described, to the rear of a projectile for the purpose of communicating to it the rifle motion, without restricting myself to the particular proportions or materials mentioned in the description."

And in further emphasis of the point that the invention might also be used in smooth-bored guns, he says:

> "I also claim *the use* of a similar ring of extensible metal in smooth-bored guns, as set forth in the foregoing specification."

It is to be noted that Dr. Woodbridge prepared and prosecuted his own application. It is doubtless owing to this fact that the claims were somewhat informal, since, of course, it was unnecessary to claim the particular "purpose" or the particular "use" of the invention, since an inventor is entitled to all the uses to which his invention may be put.

The Patent Office then acted upon the application and referred the applicant to a publication entitled the "Artizan," and also to the rejected application of Francis Mayer, which, of course, as has been established by decisions of the courts since the date of the Examiner's action in that case, was not a proper reference, since it was not a publication or a patent. The applicant replied to this letter of the Examiner in an argument pointing out the differences between his application and the construction shown in the "Artizan," and thereupon the Examiner replied to the applicant's letter by suggesting certain skeleton claims which the applicant substantially adopted by his letter of March 23, 1852. (Rec., 12.) In these amended claims the Examiner and the applicant first defined the broad idea of the invention, namely, the extensible metallic ring, or sabot, as set forth in the first claim, thus covering a construction applicable for use with either a smooth-bored or rifled gun, and in the second claim, which was made in specific and subordinate claim, they directed the subject matter thereof particularly to the metallic ring furnished with projections, as described, in combination with a rifle-bored gun, and ending with the phrase: "For the purpose of communicating the rifle motion in manner substantially as herein set forth," which phrase, of course, refers to the entire metallic ring.

In the second claim the rifle-bored gun was brought in

as an element of the combination because the specific feature of the projections could not be usefully employed in connection with a smooth-bored gun.

It is the subject matter of the broad claim 1 only which is here involved in issue.

The fundamental principle of the Woodbridge "sabot," as described by him in the specification and defined in claim 1 of the allowed application, is that of the expansion of the "sabot" under pressure of the powder gases, whereby it is caused to completely close the bore of the gun as the projectile is driven forward and take the grooves of the rifling if the gun is rifled, and impart a rotary motion to the projectile.

The sabot without projections was one form of embodiment of his invention; the sabot with projections was another form. Each contemplated expansion of the sabot and gripping of the bore and of the shell thereby, and the rifle motion was imparted by the engagement due to such expansion or stretching. If a shell were constructed exactly as the language of claim 1 calls for, and without projections, and should be (as it was) used in rifled guns it would give the rifle motion to the projectile. Of course it would make no difference to what use the shell should be put. It is admitted by defendant's expert that a smooth sabot projectile used for a rifled gun would come under claim 1.

These projections performed the function of enabling the shell to fit the gun, when rifled; they could not perform the functions of closing the bore against windage, giving the shell a motion in the direction of the axis of the bore and imparting the rifle motion, because such actions were obtained by expanding or stretching the metal into the rifle grooves so as to close the same and firmly engage them and by rigid connection between the

ring and the projectile, obtained either by the wedging action, as in Woodbridge and Hotchkiss, or by the permanent connection as in Parrott. The projections, therefore, form no part of the essential inventive idea.

Woodbridge was the first to devise rotation-giving and bore-closing means for projectiles capable of being expanded without rupture into the grooves and against the bore by the initial force of the gases of explosions so as to fully close the bore and grooves and at the same time retain a sufficient grasp on the projectile to cause the latter to take the rotation imparted to the said means by the rifling of the gun. And these characteristics are found in the infringing projectiles.

The Amendment Made by Woodbridge.

The Court of Claims grounds its limitation of claim 1 (or of the specification, it is not clear which) upon the amendment of his original claims filed March 23, 1852, and upon an interpretation of his attempted amendment in 1861. The court says (Opinion, 36):

> "On the contrary the principles he embraced within his claims had been theretofore conceived, as fully attested by the *emendations of his claims to meet* the state of the *prior* art. * * * He submitted *without protest* to the rulings of the Patent Office calling his attention to the state of the prior art. The applicant willingly adopted the amendments suggested and thereby assented to their limitation." (Italics ours.)

In the first place what was the prior art cited by the Examiner? First, the Mayer rejected application. Of course, this was not a proper reference, now or then, not being a patent or a printed publication. *Herring* v. *Nelson*, Fed. Case No. 6424. But it disclosed merely a projectile provided with "centering" bands slightly

larger than the diameter of the projectile, with the intention to provide a snug fit, avoid scoring of the gun bore, preventing "wabbling" and prevent the escape of the powder or explosive gases. There is no description of any "rifling" action. If the bands had been made larger than the gun bore and employed in rifled ordnance they might have served as bands of the "compression" type, but this would be an inventive departure from Mayer's disclosure, and was clearly not contemplated, as the Mayer projectile was intended for use with muzzle loaders only, as evidenced by the reference to "ramming." There is not suggestion of an *extensible* metal ring adapted to be expanded to take into the rifle grooves of the bore or for other purposes. No matter what it showed, Woodbridge pointed out that he made his invention prior to Mayer's date of application. That was the only distinction he made. And the Examiner dropped it as a reference.

The other citation was the "Artisan," a publication. It shows in Fig. 2 a wooden wadding for centering the shot against wabbling. It is not a ring of extensible metal and not capable of giving the rifle motion or being expanded. Fig. 4 shows an iron shot incapable of being expanded and has no ring or sabot. Woodbridge did not admit that this shot had a ring capable of extension without rupture. He expressly denied it in his letter of February 23, 1852.

The article further referred to a sugar loaf shot of the Messrs. Lancaster with the suggestion that "the shot might be made of cast iron with a leaden belt to take into the grooves of the rifle barrel." Dr. Woodbridge took the trouble to take note of this reference and distinguish therefrom in his argument, although he need not have done so, as this bare suggestion of an

idea without description of *how* it is to be carried out in construction or operation could not constitute an anticipation. What the belt was like and how mounted on the projectile, whether a wide coating of lead, acting by compression, or a longitudinal belt positively fitting the grooves, nor whether a circular belt larger than the bore and also acting on the compression system, nor whether it actually in itself gave the rifle motion, and the belt was merely to prevent erosion, does not appear.

But Woodbridge did not distinguish from this reference on the ground that it did not show the projection while his own device possessed such feature, but on the other distinctions of his invention.

Now the Examiner did not reply by saying "your argument does not convince me of the differences between your invention and the references and you can only clear the latter by limiting your claim to projections," which is what the court's statement would lead one to believe he said, but he accepted Woodbridge's statement, acquiesced by silence therein and suggested the skeleton form of two claims, evidently for the purpose of putting the claims in more formal language. And the first of these claims, the one now in issue, contained no reference to projections, while it is evident that if the references disclosed the idea of an extensible metallic ring adapted to be expanding, they would necessarily meet the claim, not only in respect to the structure therein, but also in the performance of the functions of closing the bore and causing the projectile to travel in the axis of the bore.

Another dilemma in which the court's position places it whether or not Woodbridge had the idea of giving the rifle motion by means other than projections, is that the court itself in its "appendix" forming part of Find-

ing XIII specifically describes the ring or sabot of each of the projectiles used by the government as being expanded to close the bore against windage and such action also necessarily performs the other function expressed in claim 1 of centering the projectile and causing it to travel in the direction of the axis of the bore of the gun. Hence whether or not Woodbridge's projectile or the defendant's projectiles be used in a rifled or smooth bored gun, the latter embody the subject matter of claim 1.

The *proper* interpretation of the claim is that expressed by the Board of Examiners-in-Chief in their opinion, as follows:

> "The first claim, however, is a broad one, to the use of the extensible metallic ring or sabot for the purposes above mentioned without reference to the projections."

The same interpretation had been given by the Primary Examiner, was afterwards given by Congress and its committees, with full knowledge of the filewrapper and its prior art, and by all the patent experts in the case who testified before the Court of Claims, including defendant's expert. The claim so interpreted formed the basis for the evidence as to the value of the invention to the government on which the court based its finding of value in the last paragraph of Finding XII.

Other Limitations Attempted to Be Imposed on Claim 1 by Government Counsel Below.

These were the outer and inner lips formed by the groove at the base of the sabot. Such attempt was based on the words "as above described." The lack of force of this phrase to import anything into the claim not necessarily imported thereto by geenral rules of con-

struction is fully set forth in *National Tube Co.* v. *Mack,* 216 F. R. 507, C. C. A. (Sixth Circuit).

The attempted limitation of the claims by the words "substantially as described" is also fully answered in the case of *Hobbs* v. *Beach,* 180 U. S. 400, 21 Sup. Ct. 416, 45 Law Ed. 586, where the Supreme Court observed that even if these words are important in the claim, that it is still true, as observed in *Morley Sewing Machine Company* v. *Lancaster,* 129 U. S. 269, 9 Sup. Ct. 299, 32 Law 715:

> "Where an invention is one of primary character, and the mechanical functions performed by the machines are, as a whole entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements."

In the De Bange case (for the gas check of asbestos and tallow) the claim specified the ring constituting the packing as *"the yielding packing M."* The specification described "M" as a ring made up of the asbestos and tallow, and two enclosing shells of copper, and two outer shells of brass. The government contended that the use of the reference character "M" in the claim limited the claim to all the details of construction of the ring specified in the description, and that since the government used only steel shells in place of the copper and brass shells of the De Bange specification, it did not infringe. (Certainly the use of reference characters in a claim has more limiting effect than the words "as above described" used by Woodbridge, as is well recognized in patent law.) But the Supreme Court said:

> "It would seem, therefore, that the contention of the Government turns upon a question of fact found against it by the court below; that is, it was found that the particular envelop of the tallow and asbestos pad were not essential features of De Bange's

invention, and that the substitution of steel rings for brass rings would be an infringement of the invention. As said by counsel for claimant, claim 1, 'does not recite among its elements the materials whereof the envelop (of the pad) and rings are made. It is, on the contrary, obvious that any suitable material may be used for these subsidiary parts.' It is conceded that pliable copper envelop (M2) may be properly regarded as a part of the 'Yielding packing.' The patentee so states, but he does not say that the 'strong shells of brass M3 M3 are parts' of it. * * * It would indeed be arbitrary, as said by claimant, to read into the claim the specific metal of which those shells are composed 'for no other purpose than to render it (the claim) worthless.'

We have seen De Bange describe what he conceived to be the best form of his invention, and contemplated that it could be represented in other forms and proportions. This, however, was unnecessary, for the law would secure him against imitation by other forms and proportions. *Winans* v. *Denmead*, 15 Howe 330, 14 L. Ed. 717; *Hotchkiss* v. *Greenwood*, 11 How. 248, 256, 13 L. Ed. 683, 690; *Western Electric Co.* v. *La Rue*, 139 U. S. 601, 608, 35 L. Ed. 294, 297, 11 Sup. Ct. Rep. 670.

We think, therefore, that the Court of Claims rightfully decided the question of infringement against the Government."

Much has been made by the court of Woodbridge's attempt in 1861 to amend his claim by adding thereto the words "whether the binder part be grooved or not, and without regard to the form of the bore." But this attempt (which would not have been made by an attorney, because the claim already was broad enough to include the suggested structure) was merely a precautionary effort to make plain what was already embraced in the language. He did not admit that the allowed claim did not cover the suggestion since he said "as it seems now that it ought." (Rec., 14.)

It must be said that the court's effort to twist this attempt of the inventor to make more certain what was already clear, into an admission, savors of a partisan effort to make out a case.

THE REMAINING PRIOR ART PATENTS AND PUBLICATIONS.

The court below, as we have seen, found Woodbridge entitled to a patent but held that he had limited his patent to the projections by an amendment made in view of a certain prior publication and a rejected application. In view of this finding and holding it is supposed that all other prior art matters become immaterial, and unnecessary for consideration by the Supreme Court. But in Finding IX, the court below lists ten patents or publications which are alleged to "relate" to the prior art. No further finding of fact is made as to these matters.

Assuming that upon some ground, they may be held to be still entitled to consideration by this court, plaintiffs will discuss them.

THE FRENCH PATENTS TO DELVIGNE, MOREL AND MINIE HAVE NOT BEEN PROVED—EITHER IN RESPECT TO THEIR DATES OF ISSUE OR THE DATES WHEN THEIR SPECIFICATIONS BECAME ACCESSIBLE TO THE PUBLIC, AND ARE THEREFORE NOT IN THE PRIOR ART.

This objection is real and substantial, not technical as urged by Government counsel below. The above dates not proved or shown in any way, are essential to establish anticipation under the statute and the authorities, of the date of Woodbridge's application; the knowledge of them is essential to afford plaintiffs the opportunity of proving in reply that his invention antedated the

effective anticipating dates of these patents. It is a fact of which the courts take judicial notice, that French patents are *dated as of the day the applications are filed.* Plaintiff's have endeavored to ascertain when these patents were actually sealed and issued, and, most important, when their specifications *became accessible to the public.* It is their belief that Morel and Minie were not published until after Woodbridge's reduction to practice in 1850. As to Delvigne they were unable to find out anything respecting the date when his specification became accessible to the public. The point is further important because in the thirties and forties it was the French custom to issue secret patents, the specifications of which did not become accessible to the public for many years afterwards, sometimes ten or twelve years. This custom was probably especially applicable to weapons of warfare.

Plaintiffs duly objected to the proof of these patents, excepted to their inclusion in the findings and assigned error for such inclusion, and the court below made a special finding thereon in IX (incorrectly designating the "copies of specifications" as "patents," however.)

The leading cases on this point are *Howe* v. *Morton,* 12 Fed. Cases, p. 688 Case No. 6769; *De Florez* v. *Reynolds,* 8 Fed. 434; *Brooks* v. *Norcross,* Fed. Case No. 1957; *Ireson* v. *Pierce,* 39 Fed. 795.

See also the recent full discussion of the point and citation of all the authorities by the Commissioner of Patents in *ex parte Rackham,* 306 Patent Office Official Gazette, 243.

See also *Barber* v. *Otis Motor Sales Co.,* 265 Fed. 675; *American Roll Paper Co.* v. *Western,* 45 Fed. 686; *Sirocco Eng. Co.* v. *Sturtevant,* 220 Fed. 137; *Elec. Accum.*

Co. v. *Julien Electric Co.*, 36 Fed. 117; *Bliss* v. *Merrill*, 33 Fed. 39.

Defendants first relied on Section 893 of the Revised Statutes for proof of these patents, then on plaintiffs' objection, sought additional proof as to Delvigne, although not as to Morel or Minie. Plaintiffs have no quarrel with Section 893. It merely makes the certificate of the Commissioner *prima facie* evidence of the grant of letters patent and of the *date* thereof. But the *date* of French patents is the date of the beginning of the term, not when the patent is granted, and *not* the *date* when the specifications *become accessible* to the public, which are usually years after the "date of the patent." Section 893 was useful only in fixing the limit of the terms of U. S. patents at the period when they were limited by statute by a previously granted foreign patent.

1. Taking the French patents there is no certified copy of the *"Brevet d'Invention"* or Letters Patent. The certified copies of alleged French patents filed are merely copies of the *specifications* accompanying the respective Letters Patent. The certificates of the Director of the French Patent Office, of the Chief of the Bureau of Personnel of the ministry of commerce, and minister of foreign affairs, and the American Vice-Consul General attached to the hand-written copy of the *Delvigne patent only,* are merely to the effect that the copy is a correct copy of the *specification.*

This certificate, apart from the fact that it is not under the great seal of France, is not a certificate attesting the genuineness of the alleged Letters Patent, nor proof of the grant of the same.

Proof that a copy is a true copy of a specification is not proof of the issue of Letters Patent. In the

case of *Schoerken* v. *Swift*, 7 Fed. 469, it appears to be plain from the decision of the court that there was a certified copy of the "patent." That is not the case here.

2. In respect to these foreign patents it has always been held necessary to prove two facts. First, the date of the official grant of the patent; and, second, the date when specifications accompanying the patent became accessible to the public. This is done in the case of British patents by proving the date of sealing, and proving the date of enrollment of complete specifications. The importance of the proof of these points depends not upon any technical rule of evidence as to authentication of foreign documents, but from the mode of procedure in foreign patents, which includes in England the filing of a provisional specification which may or may not mature into a patent; the dating of the patent when issued from such filing date, the subsequent date of sealing of the grant and the subsequent date of filing or enrollment of the complete specifications, whereby the invention is made accessible to the public, and including the circumstances that in old French patents two kinds were granted, namely, private and public, and the former have been held not to be bars under the United States practice, and also the practice of dating French patents from the date of deposit of the documents comprising the application. In the leading case of *Howe* v. *Morton*, 12 Fed. Cases, p. 668, Case No. 6769, a British patent was cited that was dated in December, 1844, but it was proved that complete specifications had not been enrolled until June, 1845. The Court said:

> "What is the meaning of the word 'patented'? The English government may give such effect to certain acts of their own as they see fit; they may say letters patent may be granted in general terms, and that the fourteen years they grant may begin

at the date of the letters patent, though no specification be enrolled till six months after. That is the law of England—but the question is, What did the Congress of the United States intend when they used the words, 'patented in any foreign country'? Did they mean that the invention might be patented before it was made? Because under the English law, the letters patent might be granted before the specification was made, and the specification might contain inventions made after the letters patent were granted. * * * What is meant by Congress undoubtedly is, in the first place, that there shall have been an invention; and, in the second place, that it shall have been made patent to the world—patented. Now, we have no satisfactory evidence that the invention was made, and we have positive evidence that it was not made known to the world by being patented, until June, 1845; it was not made patent until after the invention of Howe."

This case has been repeatedly followed. In a similar case, Judge Jenkins, in *American Bell Telephone Company* v. *Cushman,* 57 Fed. p. 845, said:

"The invention is not patented abroad before the actual sealing and issuance of the patent. * * * The term patented, as used in our statutes, does not mean the preliminary proceedings, but the actual issuance of the patent under the seal of the government speaking the exercise of sovereign will, investing the patentee with the grant of a monopoly. *Gold & Stock Telegraph Co.* v. *Commercial Telegram Co.,* 31 O. G. 1559, 23 Fed. Rep. 340; *Emerson* v. *Lippert,* 42 O. G. 964, 31 Fed. Rep. 911; *Seibert Cylinder Oil Co.* v. *Powell Co.,* 47 O. G. 1072, 35 Fed. Rep. 591; *Smith* v. *Goodyear Dental Vulcanite Co.,* 11 O. G. 246, U. S. 486."

This case goes to the point of the sealing of the grant.

Further on the point that not only must there be a sealing but a disclosure of the invention in the specifications, and the date of this disclosure must also be

proved, the case of *Rumpff & Graessler* v. *Kohler,* 23 O. G. C. B. 1883, 29, is pertinent, in which the Commissioner said: "In all the cases which I have been able to find, the word 'patented' has been given its ordinary construction—that is, *made known.* An invention cannot be considered as made known or patented until a complete description of it is given."

See also *American Diamond Rock Co.* v. *Seldon,* 1 Fed. Cases, p. 639, Case 297.

3. Referring to the copy of the specification of the alleged Delvigne French patent, certified to by the French Patent Office, it is to be noted that it starts out with the heading "specification" and the certificate applies to the fact that the copy is a true copy thereof. In the handwritten copy of the specification, first paragraph thereof, is something additional to that shown in the printed copy of the specification. This additional paragraph is as follows:

> "Specification annexed to the five years patent *taken* out on May 17th, 1839, by," etc., "to whom it was delivered by order of the minister," etc., "on the 13th of April, 1840."

This paragraph was interpolated by the Director of the French Patent Office into the specification without authority. It is not evidence of the facts therein recited nor of the date of the actual grant or decree constituting the "Brevets d'Invention" nor does it even purport to be proof of the fact when the specifications were made accessible to the public. It might well have been a secret patent and the specification not published until many years after the dates given in this interpolated paragraph. Moreover, there is nothing in this certificate to show anything in contradiction of the point made by plaintiffs that French patents of this date were dated

as of the date of deposit, which point is still insisted to be correct.

Renouard French Patent Law, 1825.
Perpigna on French Law of Patents, English Edition, Published in Paris in 1832.
Reynault Patent Law.

The defendant makes the point that the date of the patent corresponds with the alleged date of delivery of the patent stated in the unauthorized, interpolated and incompetent paragraph at the beginning of the specification; but the point is, Where did the party who certified to this fact get his knowledge as to the date of delivery? Nor is there any evidence when these specifications became accessible to the public.

In the leading case of *Brooks* v. *Norcross*, Fed. Case No. 1957, involving proof of a prior French patent, it was said:

> "Again, copies are given in evidence of the specifications and drawings of both of those machines; but none of the *patent itself*, in either, and without the latter, the proof required by law that they were in truth patented, is defective, though the probability is that they were patented in some way.
>
> A copy of the patent itself has been omitted by accident, or because it would disclose the fact of the patent being private. The French laws at that time required also a *publication of the patent for a certain length of time in the bulletin of the laws, in order to make it valid.* But no evidence of such publication in either of these cases is attempted here. Reynault Patent Law, 137 Perp. Pat. in 4 Law Lib., c. 51."

In *DeFlorez* v. *Reynolds*, 8 Fed. 434, there is a long and elaborate discussion of the necessity of proof of the effective dates of French patents. From a discussion on p. 436 it appears that the word "taken" which was made "taken out" in the interpolated paragraph

in the specification of the Delvigne patent, means "applied for." This case relates to fixing the term of the United States patent, which under the law was then limited to expire with the expiration of the term of any prior foreign patent, and the court distinguished between the date of a foreign patent when considering it for the effect of limiting the term of the U. S. patent and the effect of the same in respect to its date when used as an anticipation of the U. S. patent. Thus at the end of the opinion the court said, after deciding that the term of a U. S. patent ran from the date when the foreign patent was sealed:

> "This view is not necessarily applied to a case where a foreign patent to one inventor is set up to defeat a United States patent to a different inventor. In such case the manifest intention of law is that the foreign patent shall apply only as to a date when the invention *was published or accessible to the public* and not as to an earlier date from which the inventor may have enjoyed the benefit of a foreign patent as a patent."

Finally, this point is conclusively settled by the decision of the Court of Appeals of the District of Columbia in the case of *Rousseau* v. *Brown*, 21 App. D. C. 104 O. G. 1120, Commissioner Decs. 1903, p. 588 (opinion by Chief Justice Alvey)' where Rousseau submitted "to the Patent Office in support of his claim what he alleged to be an official copy of his French patent; but which in fact appears to be only *a copy of the specifications and drawings annexed to a French patent taken by Louis Rousseau on an application filed April* 2, 1900, *and delivered to Rousseau* on the 18th day of July, 1900." (It will be seen that this copy and certificate were practically identical with those in this case.) "The patent itself has not been exhibited * * *. A foreign patent is admissible on an issue of priority, but only as of the date that it actually became a patent not of the date

established by relation to the application upon which it was granted." * * * "A foreign patent is competent evidence by force of the statute, to negative the alleged novelty of an invention described in a pending application but as we have before stated, the French patent, alleged to have been granted on July 18, 1900, has not been exhibited in evidence."

In the case of *Robin & Mueller* v. *Bonnet,* 113 O. G. 2506, which was merely a decision by a commissioner of patents, it appears there was apparently a certified copy of the *grant.* However that may be, if there is anything in this case opposed to the case of *Rousseau* v. *Brown, decided* by the District of Columbia Court of Appeals, the latter must prevail.

Abbott's Patent Law of All Nations, 1886, p. 151.

Greeley Foreign Patents and Trade-mark Laws, p. 115.

It is to be noted that the "dates" of these patents are only a short time before the date of invention of the Woodbridge projectile, and particularly in the case of the Minie patent, *it is extremely probable that the same did not become public until long after the date of the Woodbridge invention.*

As stated in *Brooks* v. *Norcross,* it is probable that the defendant did not file a certified copy of the letters patent of these two patents and show the date of publication of the specifications, because such proof would have shown that they were subsequent to the Woodbridge invention.

The disclosures made in these patents are not material to the questions of novelty and limitation of the Woodbridge invention, but plaintiffs should not be obliged to consider, at any stage of this case, patents

whose effective dates are not proved and which may have been subsequent to the Woodbridge invention.

THE DISCLOSURES OF THE ALLEGED PRIOR ART PATENTS AND PUBLICATIONS.

Under the rules of this court the testimony of the experts explaining the construction shown in these patents is not available on this appeal, and in the absence of the same and of any discussion of the disclosures by the court below, it would seem unfair to both parties for this court to attempt an analysis *de novo*. However, saving any rights that plaintiffs may possess by reason of such lack of evidence, or finding, or discussion, plaintiffs will take up these articles.

COURT OF CLAIMS EXHIBIT A-1, WILKINSON'S BRITISH PATENT NO. 1694 OF 1789.

Impossible to understand what structure intended to be disclosed as admitted by the experts for both parties. The "belt" may be integral with the cast iron body of the projectile or separate. Impossible to say whether of the "stud" or "compression" system. It certainly does not disclose the idea of expansion of a sabot of soft metal on a hard metal projectile.

COURT OF CLAIMS EXHIBIT A-2, MANTON'S BRITISH PATENT NO. 1893 OF 1792.

No limitation of claim 1 by this patent because it possesses no extensible metallic ring. It shows a wadding of wood which would split if expanded and particularly could not be wedged on the shot without splitting. This crude device never came into use.

Defendant admits that this patent discloses nothing

but a sabot of wood. It asserts that the "device did operate successfully as shown by Major Mordecai's report." In this defendant is mistaken. Major Mordecai states that the device was "perhaps" tried and the quotation from Greener on Gunnery, on which he relied, "that the plan proposed is now on trial or shortly will be." There is no evidence that it ever was actually tried. It was certainly never put into use from its date, 1792, either before Woodbridge or after Woodbridge, in spite of the great demand for a successful means for giving the rifle motion to projectiles, and in spite of the fact that, as stated by the Board of Examiners in Chief of the Patent Office: "Seldom during any period in the history of the world has any subject connected with the science of war attracted more attention and been productive of more *experiments* than the subject of making suitable projectiles for rifle cannon."

It is merely a proposal of an impracticable plan and cannot under the law constitute an anticipation or limitation. It is not a mere case of a substitution of one material for another. This point is conclusively settled in *Smith* v. *Goodyear Dental Vulcanite Co.* 93 U. S. 486, 23 Law Ed. 952, involving a patent for a plate of hard rubber for holding artificial teeth, plaster plates being previously used (see that part of the Sup. Ct. opinion on p. 954, 23 Law Ed.).

This case has been approved and followed in numerous cases as seen in the note thereto, occurring on p. 1003, 23 Law Ed.

In the De Bange case (*United States* v. *Societe Anonyme Des Anciens Etablissements Cail,* 224 U. S. 56 Law Ed. 778, same case below 43 Ct. Cl. 25) which was a Court of Claims case very similar in the nature of the invention and defenses to the present case,

the invention consisted of a gas check or "obturator" for breech-loading cannon and a packing-ring formed of asbestos and tallow, which ring was enclosed in copper shells which in turn were embraced by brass shells. The ring surrounded the closing plug or breech block near the inner end of the latter (just as the ring surrounded the projectile in the Woodbridge invention) and when the charge was fired the force of the explosive gases *expanded the ring* against the bore of the gun, closing the bore against the escape of the gas (as the Woodbridge ring on the projectile was expanded).

The Supreme Court after a reference to the patents of the prior art and the findings of the Court of Claims relative thereto, said in respect to these patents and the bearing on the De Bange invention:

> "They reveal nothing material to be considered that the findings of the Court of Claims do not show of the prior art and the progress, from its failure to the success of the De Bange invention—a success, it may be conceded, that availed itself of all that the prior art demonstrated, but went beyond it to the fulfillment that it had not achieved.
>
> The necessity of a gas check to the success of breech-loading guns all could see, and what a device, to be successful, must do; but the world struggled a long time with the problem, and that problem was to find something which would stand the intense heat generated and the great force caused by the explosion of the powder in a high power gun, and the backward escape of the resultant gas under the enormous pressure exerted, and this not in one service of the gun, but in many services. The experiments are detailed in the findings. Metallic cups were tried and paper cups. As early as 1858 India rubber was suggested. Its elasticity, it was thought, would afford all that was necessary for a complete automatic obturation, the gas by its expansion 'to seal its own escape.'
>
> Rubber had some success when constructed in rings of varying degrees of suppleness and hard-

ness, and seemed to have settled the problem. But defects subsequently developed and experiments continued for something better and which would fulfill all the conditions. Then soap obturators were tried, and finally Colonel De Bange's invention of tallow and asbestos. If our purpose was speculative, not practical, we might pause to wonder how such substances could produce such results under the conditions to which they are subjected, and by wondering we express in a way the quality of the invention. We are told by the findings of the Court of Claims that a gas check 'is subject to a pressure of from 30,000 to 40,000 pounds per square inch, to very high temperatures, to the effects of corrosive gases, and the effects of rapid and violent shocks.'

We need not, however, dwell longer on the excellence of the invention. The Government has testified to its excellence by using it in the guns intended for the national defense."

This is not a case of substitution of material at all. The Manton patent excludes the idea that Manton thought of the bold and daring conception that a metallic sabot of sufficient size and strength and stiffness to grasp a large cannon projectile could be so applied thereto as to be expanded by the force of the gases, and enter and be retained by the rifling sufficiently to rotate the projectile. He thought of nothing but an impracticable method.

"It is the well settled rule of law that an impracticable prior device not capable of performing the function of a subsequently patented device that is practicable and useful, is no anticipation. *Coffin* v. *Ogden*, 18 Wall. 124; *Clough* v. *Barker*, 106 U. S. 160; 1 Sup. Ct. 188; *Topliff* v. *Topliff*, 145 U. S. 161; 12 Sup. Ct.; *Holloway* v. *Dow*, 54 Fed. 516; Walker on Patents, Sec. 68."

Bowers v. *San Francisco Bridge Co.* 91 Fed. 410.

An unsuccessful device will not be considered an anticipation even though a patent may have been previously obtained for it.

Whitley v. *Swain*, 7 Wall. U. S. 685.
Gormully v. *Stanley*, 90 Fed. 279.

In order that a prior patent may constitute an anticipation it must be taken as it stands, and more may not be added to it by implication than it fairly shows in order to make it represent an operative device.

Farrelly v. *Wirt*, 104 Fed. 1005.
Dashiell v. *Grosvenor*, 162 U. S. 425.
Universal & Co. v. *Willimantic Linen Co.* 82 Fed. 228.
Badische v. *Kalle*, 94 Fed. 163.

COURT OF CLAIMS EXHIBIT A-3, FRENCH PATENT TO DELVIGNE NO. 7175, DATED APRIL 13, 1840.

Not proved. An explosive bullet for small arms and not capable of use in cannon. It shows nothing more than a mere explosive, lined, leaden bullet for small arms adapted to be engaged with the rifling by "foreing" the lead into the grooves through pressure from a ramrod operated by hand. As shown by works of authority describing Delvigne's bullet this forcing of a cut-out part of the body of the projectile against an inclined part of the barrel was the essential idea of engaging the projectile with the grooves and this method was found unsatisfactory because forcing in this manner deformed the body of the projectile and caused it to travel out of true line. It was asserted that the Delvigne bullet has both the wedging and the valvular action of the Woodbridge device. The first action is not even hinted at by Delvigne and could not take place as, with a small leaden bullet having an inner lining or shell of harder metal, the

lead constitutes the heavier body and there could not be that relative inertia between a heavy projectile body and a lighter sabot necessary to produce the initial forward movement of the latter relative to the former, as in Woodbridge *and all the Government infringing* projectiles of the wedging type.

Secondly, it could not function on the principle of the direct expansion or valvular action in the sense that Woodbridge, Parrott, Dahlgren, Stafford and others of the infringing projectiles function, because it does not have the inclined or "reserved" portions exposed to the initial force of explosion, but such parts are seated against the interfitting end of the firing chamber on their inner sides and jammed or forced into the rifling on their outer side, and the aid in forcing given by the explosion as referred to in the specification is merely slight and incidental, and would be of no use in a cannon projectile.

The Delvigne projectile would not function as a rifle projectile except by jamming and deforming the metal of the projectile into the firing chamber and grooves, since if loosely seated on the end of the chamber, it would not present any cup-shaped portion to catch the gases and be expanded at the initial force of the explosion by the pressure of the gases on one side and the resistance of the projectile on the other. It has not a ring extensible in the sense of Woodbridge, but a composite lead and harder metal projectile which moves forward as an entirety under the explosion. It could not be used for cannon and none of the infringing devices or patents covering the same adopted its construction and it was not even practicable for small arms.

"It is not sufficient to constitute an anticipation that the device relied upon might, by modification, be made to accomplish the function performed by the patent in question, if it were not designed by its

maker, not adopted, nor actually used, for the performance of such functions."

Topliff v. *Topliff*, 145 U. S. 161; 36 Law Ed. 661.

COURT OF CLAIMS EXHIBIT A-4, GREENER ON THE SCIENCE OF GUNNERY 1841, P. 297.

This article describes "expansive balls," that is, a ball which is itself composed of a metal capable of being expanded. It is clear that it was intended for and capable of use only in small arms. A leaden ball would, of course, be entirely impracticable for projectiles for ordnance, particularly for explosive shells. Of course, practically all leaden small arms balls of the old muzzle loading type were expanding bullets, that is, either the ramrod or the gases of explosion forced outward the soft lead of the body of the small projectile into the grooves of the rifling. It is clear that, owing to the relatively light weight and small inertia of the projectile, the lead must have been comparatively soft to enable it to be expanded and that a very large portion of the body of the projectile must be hollowed out or thinned to afford a sufficiently large pressure area relative to the thickness to enable sufficient metal to be forced out to engage the grooves. Carrying out these conditions was absolutely impracticable in either hard metal, or in lead shells for ordnance, had the latter been capable of use.

In the said Greener publication, an oval lead ball is described and it is adapted to be expanded by a plug which is driven forward into the ball. It would be impracticable to use this projectile with the plug end forward, as suggested in the Greener publication, owing to the greater inertia of the ball relative to the plug. This construction necessitated the employment of two separate

parts, and was incapable of use in or adaptation to ordnance, and its principle was never so adapted or applied. It did not solve the ordnance problem. There is no extensible ring or sabot separate from the body of the projectile and, of course, no means shown for holding such a ring on the projectile, thus rotating the shell with it.

COURT OF CLAIMS EXHIBIT A-5, HOLDSTOCK MECHANICS MAGAZINE 1843, VOLUME 39, PAGES 38 AND 39.

This projectile is plainly intended for and capable of use in small arms only. It does not have a metallic extensible ring engaging the body of the projectile. It would not be "a practical projectile for large or heavy ordnance." (Decker, Defendants' Expert.) It is not an embodiment of claim 1 of the Woodbridge application.

COURT OF CLAIMS EXHIBIT A-6, ARTISAN OF 1846.

Cited as a reference by the Patent Office. Previously discussed.

COURT OF CLAIMS EXHIBIT A-7, MECHANICS MAGAZINE FOR 1846, VOL. 44, PAGES 439, 440.

This projectile plainly intended for and capable of use in small arms only. It has no metallic extensible ring engaging the body of the projectile. No embodiment of, or limitation of Woodbridge Claim 1.

COURT OF CLAIMS EXHIBIT A-8, FRENCH PATENT TO MOREL No. 2333, AUGUST 17, 1846.

Date of issue and publication not proved. It shows merely a leaden bullet for small arms. Leaden rifle bullets had been used for a long time. Woodbridge refers to the history thereof in his pamphlet.

The problems involved in the successful production of the means for giving the rifle motion to the two kinds of projectiles were vastly different. The small arms projectile was made of lead and was slight in resistance and could be "forced" into engagement with the grooves by a ramrod operated by hand.

The cannon or ordnance projectiles were made of cast iron and weighed from three pounds to a thousand pounds, and were subjected to enormous pressures. The solution of the problem as applied to ordnance depended not on suggesting on paper the advisability of applying the principle or the possibility of using the small arms projectile, but of showing, describing and demonstrating *how* to do it practically.

As to this Morel device, Mr. Cameron, plaintiff's expert, says:

> "This patent discloses not a ring of soft metal on a hard metal projectile, as in the Woodbridge invention, but rather a projectile which is itself composed of soft metal, as lead. There is no 'sabot' or ring of any kind whatever. The soft-metal projectile is provided with a central conical depression in its base, and when the projectile is placed in the gun the projectile itself is expanded by the action of ramming the projectile home, which action would itself deform the projectile and interfere with the accuracy of its flight. In addition to this, the action of the gases of discharge would possibly expand the rear portion of the projectile itself into more intimate contact with the bore of the gun.
>
> Comparing this with the Woodbridge invention, I do not find 'an extensible metallic ring or sabot' of any kind, and, therefore, do not find the first element defined by Mr. Woodbridge in claim 1 of his specification. Such being the case, I find that Morel failed to teach the world what Woodbridge taught the world, to wit, how to prevent windage and center a hard-metal projectile in the bore of a gun, and, if the latter is rifled, impart the rifling motion to the

projectile by the expansion of a soft-metal ring or 'sabot' under the force of the gases of discharge. Like the disclosure of the Mayer application and the Artizan article, Morel failed to disclose the same underlying principle * * * of expansion of the 'sabot' of soft metal on a projectile of hard metal such as cast iron.

Furthermore, I fail to find that Morel's patent makes any suggestion of preventing windage by the use of his projectile.

I quite agree with defendant's expert, Mr. Decker, when he says that he does not think that a projectile of the form shown would be practical in large ordnance. And I also agree with him in his statement that the disclosure of the Morel patent does not show an extensible ring or 'sabot' placed on the body of a projectile and adapted to be driven forward into the groove of the gun, and that it does not embody the matter of the first claim of the Woodbridge application."

COURT OF CLAIMS EXHIBIT A-9, FRENCH PATENT TO MINIE No. 4066, DATED FEBRUARY 13, 1849.

Not proved. Not the Minie ball of Civil War fame. It shows another bullet for small arms. It has the body of the lead bullet hollowed out for substantially one-half its length, and this hollow portion is occupied by a wedge or plug which by the gases of explosion forces the lead of the bullet itself into the rifle grooves. It is thus exactly the opposite of the Woodbridge device and the latter's successors in the field of ordnance, in its action.

COURT OF CLAIMS EXHIBIT A-10, MAYER REJECTED APPLICATION.

Subsequent to Woodbridge. Cited as a reference to Woodbridge's application. Previously discussed.

INFRINGEMENT.

The Court of Claims' description of the Government projectiles as set forth in the appendix to Finding XII is so clear and demonstrates so unquestionably that each embodies the extensible metallic ring or sabot for closing the bore and causing the projectile to travel in the direction of the axis of the bore, and, when used in a rifled gun, adapted by such expansion to engage the rifle grooves, that plaintiffs desire to add nothing to such exposition. If and when such projectiles are used in a smooth bore gun, as they may, and to some extent were, they infringe, upon the court's own theory of the Woodbridge patent.

SUMMARY.

1. Woodbridge was the first to make the use of elongated projectiles in cannon successful, and the defendant has shown nothing to the contrary.

2. He was the first, so far as the record shows, to successfully give the rifle motion to cannon projectiles and, subordinately and conjointly, to close the bore against windage and center the projectile.

The Manton patent is the only reference cited to this point, and that was an impractical suggestion in a patent dated 1792, and admitted to be impracticable by defendant's expert.

3. He was the pioneer in the successful creation or application of the "expansion" principle to cannon projectiles. His claim does not cover merely the general result or principle of giving the rifle motion to projectiles for ordnance or closing off the windage, or centering the projectile, but a definite concrete construction functioning on the principle of expansion. The Government was free to use the compression and mere centering types.

4. His invention, consisting of an extensible metallic ring or sabot applied to the rear of a hard projectile ordnance was of a pioneer character and entitled to a broad interpretation, and not merely so interpreted by plaintiffs' experts but so recognized by General Benet, Admiral O'Neil and the Patent Office officials who acted on his application.

5. The alleged prior art, proved and unproved, merely demonstrates the recognition of the desirability of the result achieved by Woodbridge, and represent vain suggestions and gropings toward the goal so successfully

and brilliantly attained by him. Even after its demonstration in 1850, the ordnance officers were so skeptical of this radical innovation that they would not recommend its adoption, without further trials. Yet all these officers and the Patent Office were familiar with the principle of engaging the rifle grooves by the leaden body of small arms bullets, and also with the Manton projectile.

6. Though confined to an expansion type of device for closing the bore, centering and rotating, the Woodbridge invention, as defined in claim 1, was not limited to the specific embodiment which he illustrated as one form of the invention and specifically not to the groove, inner lip, outer lip or projections, none of which were necessary to the functioning of the "extensible metallic ring or sabot" either by anything in the prior art, or by the terms of his claim or by amendment.

7. Each of the projectiles used by the Government has the "metallic expanding band" or sabot. Each has been proved to infringe by the testimony of two competent experts. Infringement has been conceded by the Patent Office officials, and by General Benet, Admiral O'Neil and even by defendant's expert, when the claim is construed coextensively with its language.

8. The value of the invention should ge governed by the benefit conferred by the invention. So far as the record shows, the invention was the only means of giving ordnance projectiles the rifle motion and closing the bore against windage, and "some means of giving the rifle motion to elongated projectiles is indispensable," and elongated cannon projectiles were indispensable in the successful prosecution of the Civil War. The "reasonable compensation" now awarded in patent infringement cases (*Dowagiac Mfg. Co.* v. *Moline Plow Co.* 235 U. S. 641, 35 Sup. Ct. 221, 59 L. Ed. 398), should be gov-

erned here by the high importance of the invention at a critical period of the Nation's history.

9. Woodbridge made known and demonstrated his invention to the Government with a view to its adoption. It was successful in trials.

10. There is no evidence in the record that Woodbridge acquiesced in the use of his invention by the Government or anyone else between the date of his application and his request for its issue. Nor is there any evidence of any public or other use at all.

He promptly asked for the issue of his patent when there appeared to be another chance of its trial and adoption. There were not intervening rights.

11. In all the cases respecting abandonment of the invention relied on by the Court of Claims there was either an element of concealment of the invention, or facts tending to show that the patentee abandoned his intention to make the invention accessible to the public and available for its needs. None of them are like the present case where the inventor demonstrated his invention to the Government and made it available for adoption soon after the date of his invention and persistently sought new trials of it and published it to the world. The Findings of Fact do not disclose a single fact supporting intention to abandon the invention or right to a patent. They merely show lapse of time in taking out the patent on his application.

The Government was put in possession in 1850 and again in 1852 of all the facts necessary to avail itself of the invention and to recognize the inventor's rights. It deliberately refused to do so and then either deliberately or with blind negligence appropriated his invention, with constructive and actual knowledge of his inventorship.

12. The Findings do not set forth a single fact, nor

does the opinion, indicating intention to abandon his application. There was no time limit and he had a right to rely upon the contract expressed by the Commissioner to retain his application. If a different rule subsequently arose in the office, applicable to the application, then it was the Commissioner's power and duty alone to enforce it.

13. Woodbridge's reasons for retention were legitimate, and his course the natural and proper course for a prudent man vigilant of his patent property, to pursue, to avoid wastage of his patent while his only possible customer was refusing to join with him in making his invention available to the country and "pecuniarily available" to him.

14. Infringement is in effect admitted by the Finding of the Court, coupled with a proper construction of claim 1, or even with the court's limiting interpretation thereof.

The Act of Congress was intended to remedy a grave injustice to an inventor who made a most valuable contribution to the art of implements of warfare and which proved of vast importance in saving the existence of the Government during the Civil War.

It is believed that the judgment of the Court of Claims should be reversed.

Respectfully submitted,

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